

User's Guide

BLASTER™

CREATIVE
CREATIVE LABS

Sound Blaster User's Guide

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Printed in Singapore.

Fourth Edition: February 1994

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FCC Notice

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the computer and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC ID : IBACT-SB2

CAUTION

To comply with the limits for the Class B digital device, pursuant to Part 15 of the FCC Rules, this device must be installed in computer equipment certified to comply with the Class B limits. **All cables used to connect the computer and peripherals must be shielded and grounded.** Operation with non-certified computers or non-shielded cables may result in interference to radio or television reception.

MODIFICATIONS

Any changes or modifications not expressly approved by the guarantee of this device could void the user's authority to operate the equipment.

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Introduction

Welcome to Sound Blaster 2.0 audio card.

Your audio card replaces your PC beep with good-quality speech and sound that are guaranteed to change the way you work. With the array of applications included in this product, you will be able to add the richness and impact of sound to your daily work.

This guide helps you install and configure the audio card in your computer.

Before You Begin

Before you begin setting up your package, you should read the following carefully:

- ☐ Checking System Requirements
- ☐ Obtaining Latest Information
- ☐ Making a Backup
- ☐ Using the Documentation
- ☐ Document Conventions

Checking System Requirements

You need to verify that your system meets the following requirements:

- ☐ IBM 286, 386SX, 386, 486, or 100% compatible.
- ☐ EGA or VGA card (VGA recommended).
- ☐ 4 MB of hard-disk space for the software.
- ☐ Windows 3.1 for Windows applications.

Obtaining Latest Information

The README file on your audio diskette contains the latest information and changes not available at the time of printing. Please read the file before you continue. To view the file, insert the diskette in your disk drive and enter **README**.

Making a Backup

If you have not made a backup copy of the original diskettes that come with your package, you should do so before installing the software in your system. Store your original diskettes in a safe place.

Using the Documentation

The User Guide is organized into the Getting Started and User's Reference sections. Getting Started helps you install your audio card and accompanying software in the quickest way possible. User's Reference section provides you with information to learn and use the many Windows and DOS applications included in your package.

Getting Started

Chapter 1 contains information on the various components and connectors of your audio card. If you are interested in knowing more about your card, you should read this chapter.

Chapter 2 contains instructions on getting your audio card up and running.

Appendix A contains the general specifications of your audio card. These specifications present a list of the capabilities of the card.

Appendix B shows you how to change the hardware settings of your audio card. Refer to this appendix if you find that the hardware setting of your card needs changing.

Appendix C lists the problems that you may encounter while installing or using the audio card, and shows you how you can resolve them.

Appendix D shows you where to get technical support.

User's Reference

Chapter 1, "Creative WaveStudio" presents a Windows application for recording, playing and editing wave data.

Chapter 2, "Creative EnsembleAV" describes a collection of audio players in Windows that can be controlled using an interface shaped like the remote control of a hi-fi system.

Chapter 3, "Creative Soundo'LE" introduces a Windows application for recording and playing wave data, and how objects can be inserted into the various applications.

Chapter 4, "Creative Mosaic" presents a challenging Windows board game that requires you to arrange tiles in the correct sequence.

Chapter 5, "PLAY Utility" presents a DOS utility for playing sound files and audio CDs.

Chapter 6, "RECORD Utility" presents a DOS utility for recording sound in wave or voice file format.

Chapter 7, "FM Intelligent Organ" introduces a software that can transform your PC keyboard into an organ capable of playing a wide variety of musical pieces.

Document Conventions

The information in this guide follows certain conventions that are adopted to help you locate and identify the information. These conventions are divided into keyboard conventions and notices.

The keyboard conventions, shown below, identifies the various types of keyboard input.

Convention	Used for
< >	The characters in the pointed brackets indicate symbols, letters and key names on the keyboard.
Bold	Command names, switches and any text that must be presented exactly as it appears.
ALL CAPITALS	Directory names, filenames, and acronyms.
Sound directory	Directory where the software that comes with your audio card is stored.

The notices, shown below, highlights areas of text that require your attention.

Convention	Used for
	Areas of text where the information or instructions must not be taken lightly and should be noted.
	Warnings.

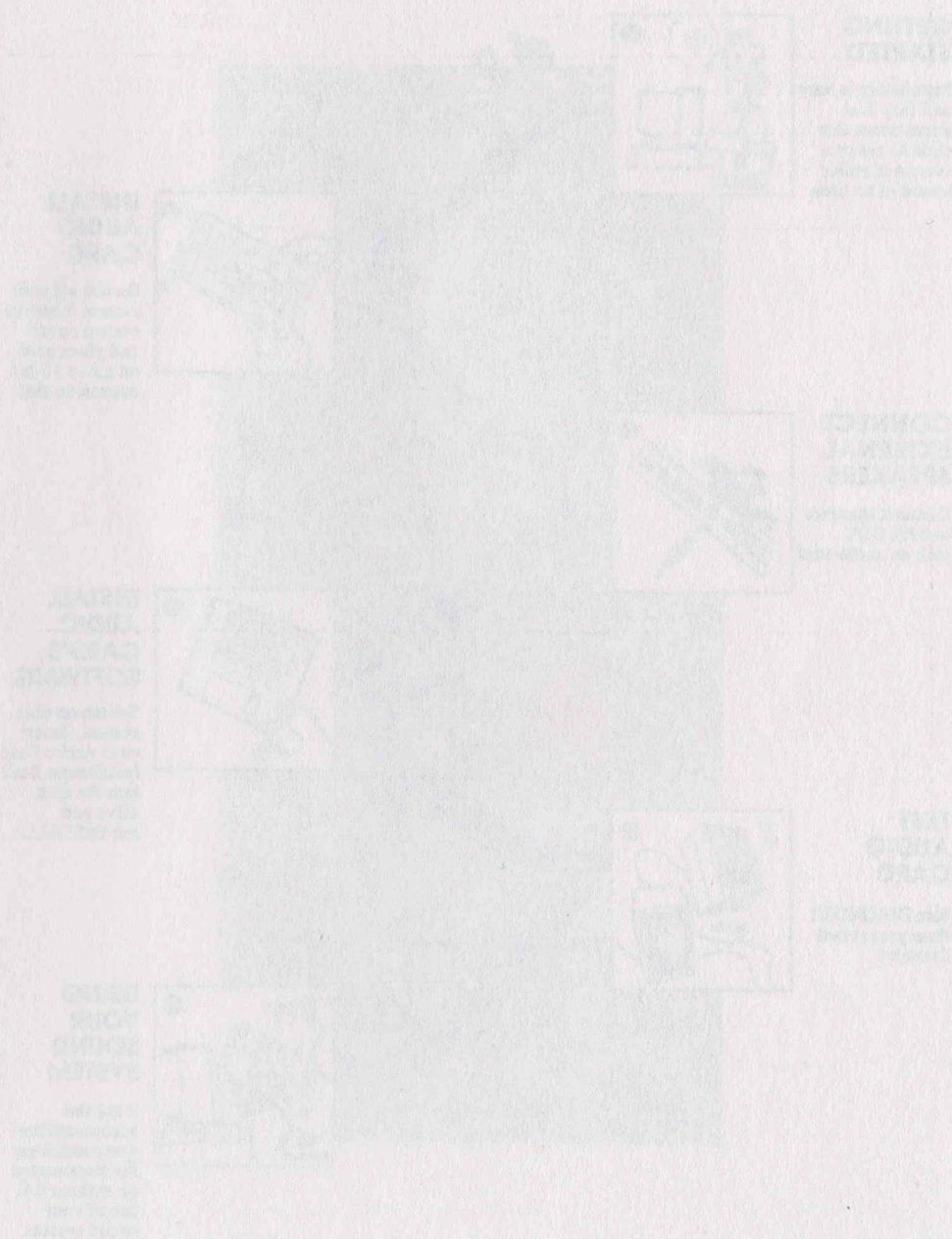
Getting Started

The diagram below presents an overview of the entire end-to-end installation process. If you are an experienced or advanced user, you may want to refer to this diagram to learn your goals and quickly find tasks.

As the setup starts, you will be asked to select settings listed in this table. You may want to change the network settings if a computer



is not



Installation Overview

The diagram below presents an overview of the audio card installation process. If you are an experienced or advanced PC user, you may only need to refer to this diagram to install your audio card quickly and easily.



As the audio card uses the factory default settings listed in this guide, you may need to change the hardware settings if a conflict occurs.

GETTING STARTED

Installation is easy and fast. Just zoom down this slide to get your system blasting sound in no time.



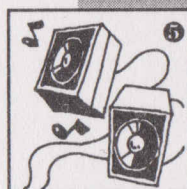
CONNECT EXTERNAL SPEAKERS

Connect speakers to SPK OUT jack on audio card.



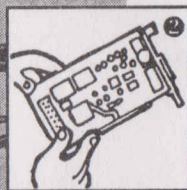
TEST AUDIO CARD

Run DIAGNOSE from your sound directory.



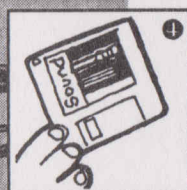
INSTALL AUDIO CARD

Switch off your system. Remove system cover and place card on a free 16-bit expansion slot.



INSTALL AUDIO CARD'S SOFTWARE

Switch on your system. Insert your Audio Card Installation Disk into the disk drive and run INSTALL.



USING YOUR SOUND SYSTEM

Read the accompanying documentation for information on making full use of your sound system.



Knowing Your Audio Card

This chapter helps you locate and identify the components of your audio card. The components of the audio card are divided into the following categories:

- ☐ Jacks and Connectors
- ☐ Jumpers
- ☐ Volume Knob

Jacks and Connectors

There are several jacks and connectors on the audio card. A jack is a one-hole connecting device for inserting a plug. Jacks are found exclusively on the card's rear panel. A connector is a connecting device consisting of many pairs of pins. Connectors are found on the audio card and its rear panel. The jacks and connectors on the audio card are shown in Figure 1-1.

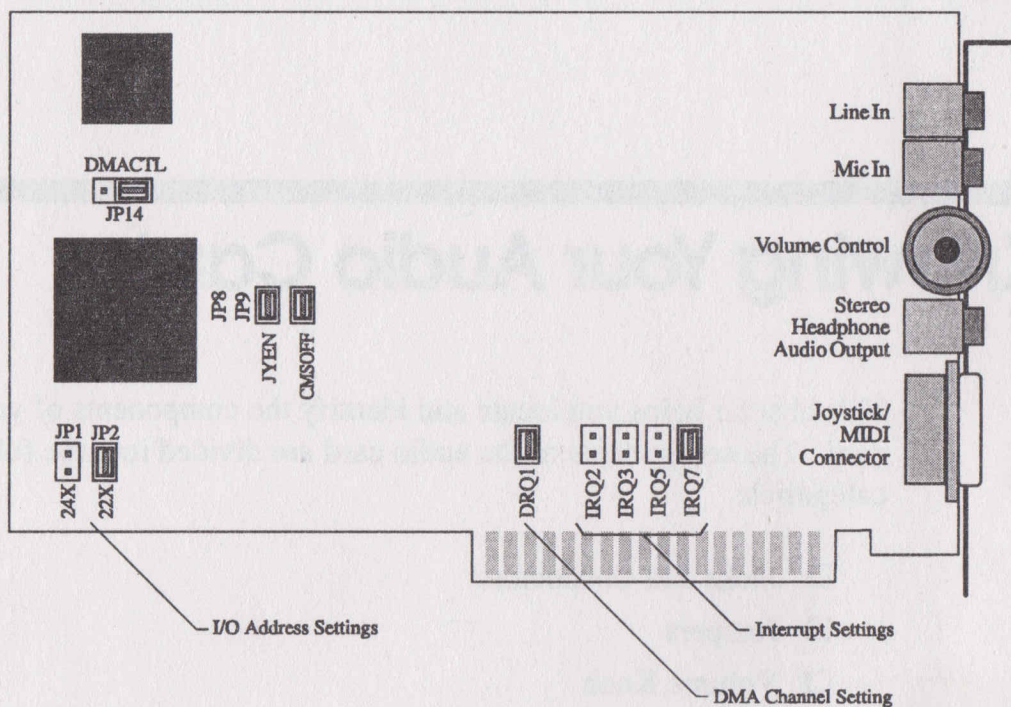


Figure 1-1: The jacks and connectors on the audio card.

Line In Jack

The Line In Jack allows you to connect devices such as a cassette player to the audio card for recording only.

Mic In Jack

The Mic In Jack allows you to connect a microphone for voice input.

Spk Out Jack

The Spk Out Jack allows you to connect speakers for audio output from the card's built-in power amplifier. The built-in amplifier has a maximum output power of four watts per channel from four-ohm speakers and two watts per channel from eight-ohm speakers. Do not play at maximum volume if your speakers cannot handle this power.

Joystick/MIDI Connector

The Joystick/MIDI Connector allows you to connect a joystick or MIDI kit to the audio card.

The joystick port on the audio card is identical to that on a standard PC game control adapter or game I/O port. You can connect any analog joystick with a 15-pin D-sub connector. It also works well with any application that is compatible with the standard PC joystick. To use two joysticks, you need a Y-cable splitter.

If there is a game card in your system, it will conflict with the joystick port on your audio card. To avoid the conflict, remove either the game card or disable the joystick port on your audio card by removing the jumper block from JP8 (see Appendix B).

The MIDI kit contains a MIDI adapter with a joystick port so that you can plug in a joystick and a MIDI device simultaneously. The kit also comes with a sequencing software that allows you to record, playback, and edit MIDI files.

Jumpers

Jumpers are pairs of pins that you can configure to define the hardware settings of your audio card.

Identifying Jumpers

The jumpers found on your audio card are mainly two-pin jumpers which are either in the disabled or enabled state. A two-pin jumper is enabled when a jumper block is placed over it as shown in Figure 1-2.

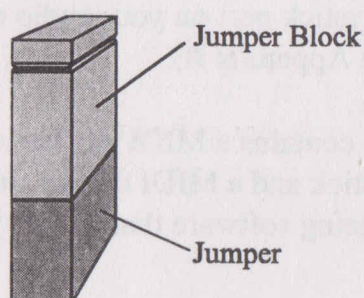


Figure 1-2: An enabled jumper.

You can identify a disabled two-pin jumper as one with no jumper block over it, or one with the jumper block over one pin as shown in Figure 1-3.

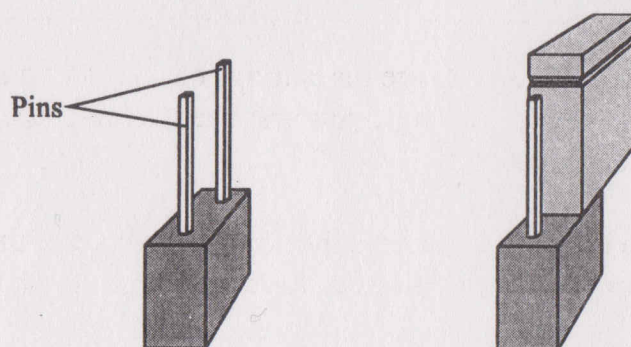


Figure 1-3: Two types of disabled jumpers.

Knowing the Hardware Settings

The jumpers on the card allow you to define the following hardware settings:

- ☐ I/O Address
- ☐ IRQ Line
- ☐ DMA Channel
- ☐ Joystick Port

I/O Addresses

I/O addresses (or more likely, I/O address range) are areas of memory used by your computer's microprocessor to distinguish among various peripheral devices connected to your system when sending or receiving data. There are several such devices on the audio card. These devices are listed in the table below with the factory default I/O address range they occupy.

I/O Address Range	Usage
200H to 207H	Game Port
220H to 233H	Audio Interface
388H to 389H	FM Music Synthesizer

You can only change the settings of your audio interface. However, to change these settings, you first need to know the respective interface's base I/O address.

The base I/O address is the starting address of the I/O address range. The factory default settings of the audio interfaces base I/O address is 220H.

IRQ Lines

The IRQ (interrupt) line is the signal line your device uses to notify your computer's central processor that it wants to send or receive data for processing. Only the IRQ line of the Audio interface can be changed. The factory default settings of the Audio interface is 5.

DMA Channels

The DMA (Direct Memory Access) channel is the signal line your device uses to transfer data directly to the system's memory. The Audio Interface allows you to transfer data through 8-bit DMA channel. The audio card uses DMA channel one.

Joystick Port

The jumper of the Joystick Port allows you to disable the joystick port on your audio card if another joystick port is already in use. The factory default setting enables the Joystick Port on your audio card.

Joystick Port	ON
Audio Interface	ON
FM Modem Expansion	ON

Setting Up Your Audio Card

This chapter guides you through the process of installing and testing the audio card in your system. This chapter is organized as follows:

- ☐ Checking the Hardware Settings
- ☐ Installing the Card
- ☐ Connecting External Speakers
- ☐ Installing the Software
- ☐ Testing the Installation

Checking the Hardware Settings

Before you install the card in your system, you should take note of the following factory default settings on the card:

Audio Interface		
Base I/O address	:	220H
I/O address range	:	220H to 233H
Joystick Port	:	Enabled
8-bit DMA	:	1
Interrupt	:	5

You will need to change the factory default settings of your audio card or another peripheral device on your system if any of the following occurs:

- ☐ A peripheral device uses the same I/O addresses, DMA channel, or interrupt setting as your card (known as a hardware conflict).
- ☐ Joystick/Game Port is used by your system.



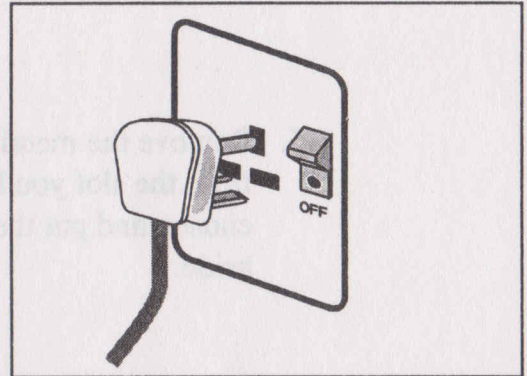
It is advisable that you do not change the audio card's default settings. If you need to change these settings, you should do so before installing the card in your system (see Appendix B).

Installing the Card

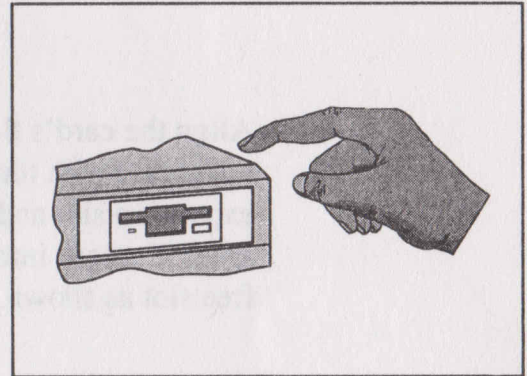
Installing the audio card in your system is simple, so please follow the instructions carefully.

To install the card:

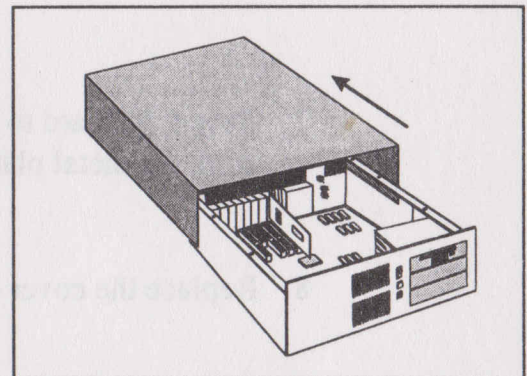
1. Switch off your system and all peripheral devices, and unplug the power cord from the wall outlet.



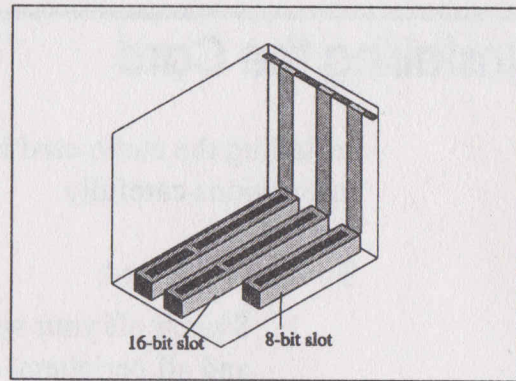
2. Touch a metal plate on your system to ground yourself and discharge any static electricity.



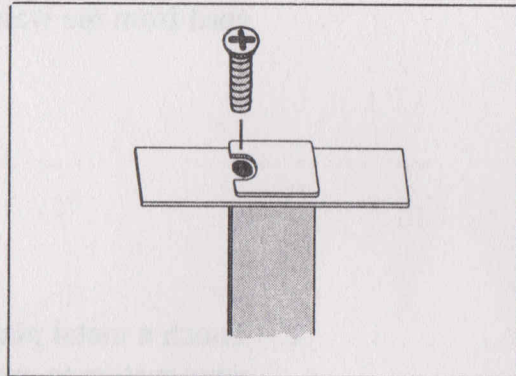
3. Remove the cover from your system.



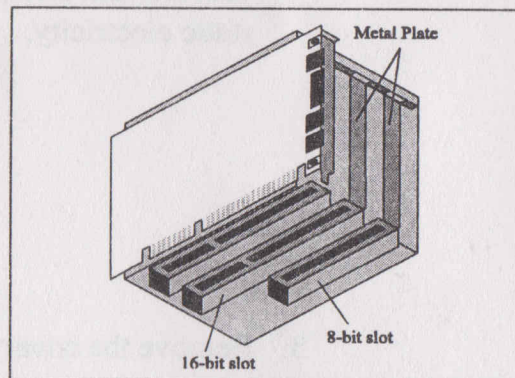
4. Find a free 8-bit expansion slot in your system.



5. Remove the metal plate from the slot you have chosen and put the screw aside.



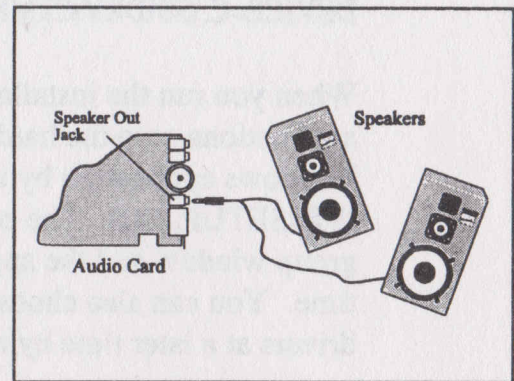
6. Align the card's 8-bit slot connector with the expansion slot and gently lower the card into the free slot as shown.



7. Secure the card to the expansion slot with the screw you removed from the metal plate.
8. Replace the cover of your system and switch it on.

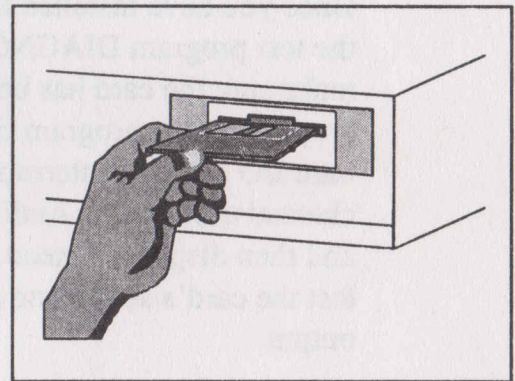
Connecting External Speakers

Once the audio card has been installed on your system, connect the speakers to your audio card.



Installing the Software

Several DOS and Windows applications are provided with the package that comes with your audio card. If you have Windows 3.1 and have not installed it, it is advisable that you install it before installing your audio card's software.



To install the software:

1. Insert your Audio Card Installation Disk into your disk drive.
2. Change to the drive containing the disk.
3. Type **INSTALL** and press <Enter>.
4. Follow the instructions on the screen to complete the installation.

The installation program creates a directory you specify and stores the software provided in it. It also adds the following statements to the AUTOEXEC.BAT and CONFIG.SYS files (assuming the default directory is C:\SB).

AUTOEXEC.BAT

```
SET BLASTER=A220 I5 D1 T3
```

```
SET SOUND=C:\SB
```


CONFIG.SYS

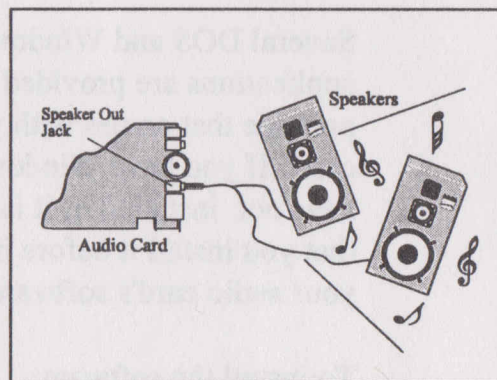
```
DEVICE=C:\SB\DRV\CTSB.SYS /UNIT=0 /BLASTER=A:220 I:5 D:1
```

```
DEVICE=C:\SB\DRV\CTMMSYS.SYS
```

When you run the installation program, it installs the DOS and Windows applications onto the hard disk. The program also allows you to setup your Windows application by adding a command to the WIN.INI file to run WINSETUP.EXE. The command automatically creates the audio card group window and the application's icon when you run Windows the next time. You can also choose to setup your Windows applications and drivers at a later time by running INSTALL from your sound directory.

Testing the Installation

Once you have installed the card, run the test program **DIAGNOSE** to make sure the card has been installed properly. This program checks the base I/O address, interrupt, and DMA channel used by the Audio interface, and then displays a menu to let you test the card's sound and music output.



To run the test program:

1. Change to your sound directory.
2. Type **DIAGNOSE** and press <Enter>.
3. Follow the instructions on the screen to complete the test.

If the test program stops or displays an error message when it is checking the Audio interface's base I/O address, interrupt, and DMA channel, it may be due to a conflict between the audio card and another peripheral card. To resolve the conflict, you have to change the settings of your audio card. (See Appendix B on how to change the settings and resolve the conflicts.)

If there is no sound output during the test, check the following:

- ☐ Speakers are connected to the card's audio output connector.
- ☐ Volume control knob of the speakers (if any) is set at mid-range.
- ☐ No hardware conflicts between the audio card and another peripheral card.



The built-in stereo power amplifier has a maximum output power of four watts per channel for four ohm speakers and two watts per channel for eight ohm speakers. Do not play at maximum volume if your speakers cannot handle this power.



General Specifications

FM music synthesizer

- ☐ 2-operator, 11-voices FM synthesis.
- ☐ Compatible with Adlib FM chip.

Digitized audio playback capability

- ☐ Playback all kinds of digitized sounds such as speech, music and special sound effects through the 8-bit Digital-to-Analog Converter (DAC).
- ☐ Variable sampling rate 4 kHz to 44.1 kHz (Mono).
- ☐ DMA transfer mode.

Digitized audio record capability

- ☐ Record any kind of sound through the microphone or other audio devices to the Analog-to-Digital Converter (ADC).
- ☐ Variable sampling rate 4 kHz to 15 kHz.
- ☐ DMA transfer mode.

Volume Control

- ☐ Hardware volume control of Master Volume.

Built-in stereo power amplifier

- ☐ Four watts per channel with four ohms stereo output.
- ☐ Automatic Gain Control Amplifier/Fixed Gain Amplifier for Microphone Level.
- ☐ Internal Audio Output Amplifier.

MIDI Interface

- ☐ Built-in MIDI interface for connection to external MIDI devices.

Changing Hardware Settings

This appendix shows you how to change the configuration of the jumpers on the card and run **DIAGNOSE**, a program that allows you to update the various system files after you change the settings of your card.



Because many applications are designed to work with these default settings, you should not change the settings unless it is absolutely necessary (for example, resolving hardware conflicts).

A Closer Look at Your Hardware Settings

If you intend to change the hardware settings of your audio card, you should first become more familiar with the jumpers on the card shown in Figure B-1.

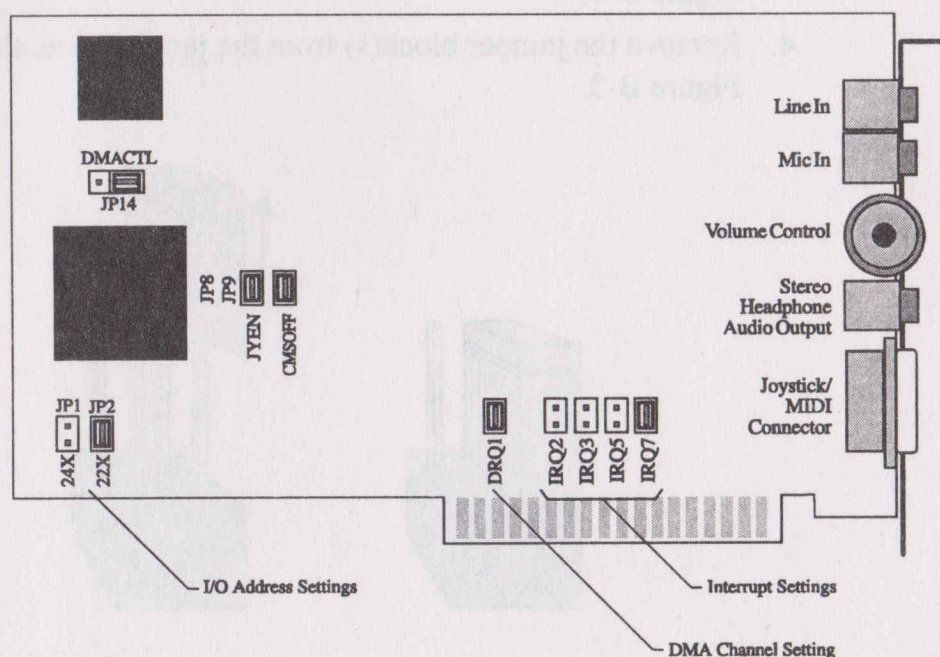


Figure B-1: Jumpers on the audio card.

In this guide, the disabled and enabled jumpers are represented using blocks as shown in Figure B-2.

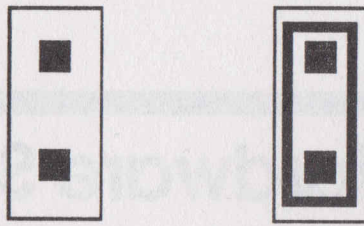


Figure B-2: Representation of disabled (left) and enabled (right) jumpers.

Changing Configuration of Jumpers

Jumper configurations define the hardware settings of the audio card. Before you actually change a jumper configuration, you should identify the current and the proposed new setting. You can then proceed to change the jumper configuration.

To change the configuration of jumper(s):

1. Switch off your computer and all other peripheral devices.
2. Remove the system's cover and card from your system.
3. Identify the jumper(s) to change.

For more information on how to identify the jumpers, refer to the Figure B-1.

4. Remove the jumper block(s) from the jumper(s) as shown in Figure B-3.

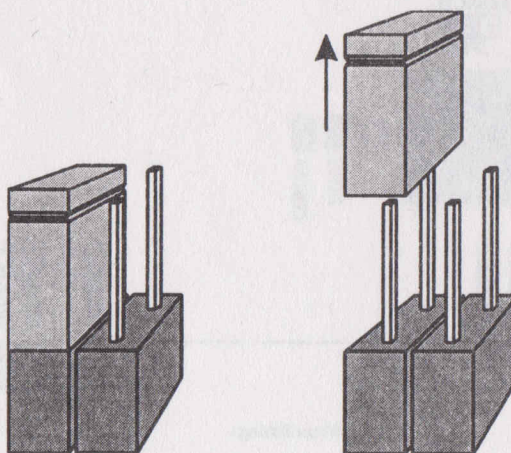


Figure B-3: Removing the Jumper Block.

5. Select the settings for the card by placing the jumper block(s) on the desired jumper(s) as shown in Figure B-4.

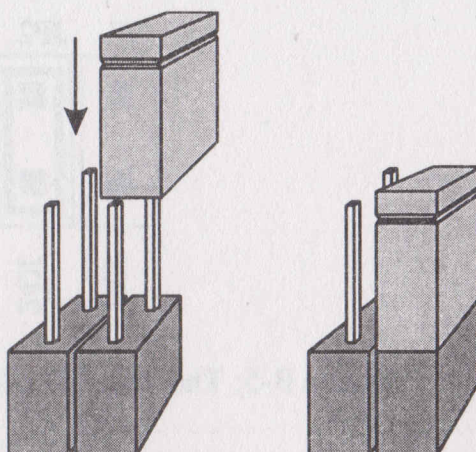


Figure B-4: Inserting the Jumper Block.

Changing the Settings

This section describes and shows you how to change the following settings.

- ☐ Base I/O Addresses
- ☐ IRQ
- ☐ DMA channel
- ☐ Joystick port

Changing Base I/O Address

Two base I/O addresses are available for the Audio interface: 220H (factory default setting), and 240H. The base I/O address, in turn, determines the I/O address range of the other devices. These settings are shown below with their I/O address range.

Base I/O Address	I/O Address Range Audio Interface
220H	220H to 233H
240H	240H to 253H

To change the base I/O address to 240H, enable the jumper corresponding to the setting shown in Figure B-5.

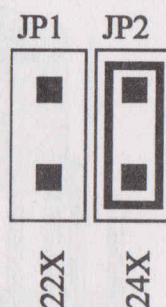


Figure B-5: The base I/O address set at 240H

Changing the IRQ Line

Four interrupts are available for the Audio interface: 2, 5 (factory default setting), 7, and 10. To change the IRQ line, enable the jumper corresponding to the setting shown in Figure B-6.

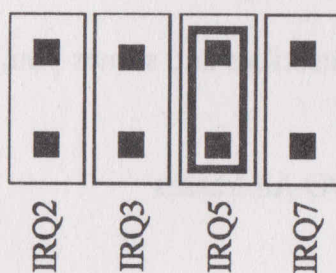


Figure B-6: The default IRQ line setting

The DMA Channel

Your Audio Interface supports DMA channel for direct data transfer to the system's memory. The factory DMA channel used is 1 (see Figure B-7).



Figure B-7: The DMA channel setting.



Do not disable the DMA channel as this will result in loss of sound.

Your audio card can share the DMA channel with other peripheral device. Sharing is done by the DMACTL pins. The factory default setting prevents the sharing of DMA channel with another peripheral device. To enable Sound Blaster to share its DMA channel, place the jumper block on pins 2-3 of jumper JP14 as shown in Figure B-8.

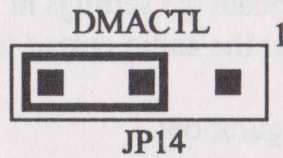


Figure B-8: Sharing DMA channel setting.

Enabling/Disabling Joystick Port

The Joystick Port on the audio card can be enabled/disabled using jumper JYEN. The factory default setting of the Joystick Port is enabled. If your Joystick Port are in use, you should disable the one on your audio card.

To change the Joystick Port setting, enable or disable jumper JYEN as shown in Figure B-9.

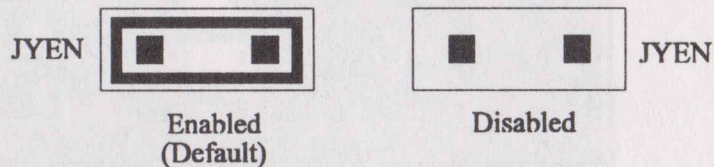


Figure B-9: Disabling Joystick Port settings.

Running the Configuration Utility

When you change the hardware settings on the card, you need to update the system files—**AUTOEXEC.BAT**, **CONFIG.SYS**, and **SYSTEM.INI**—with the new settings. You can also use **SBConfiguration** or **DIAGNOSE** to change and update the settings in Windows or DOS. **DIAGNOSE** also allows you to test the audio output (see Chapter 2).

To run **SBConfiguration**:

1. Double-click the **SBConfiguration** icon in the audio card group window.

The Sound Blaster Configuration dialog box similar to Figure B-10 appears.

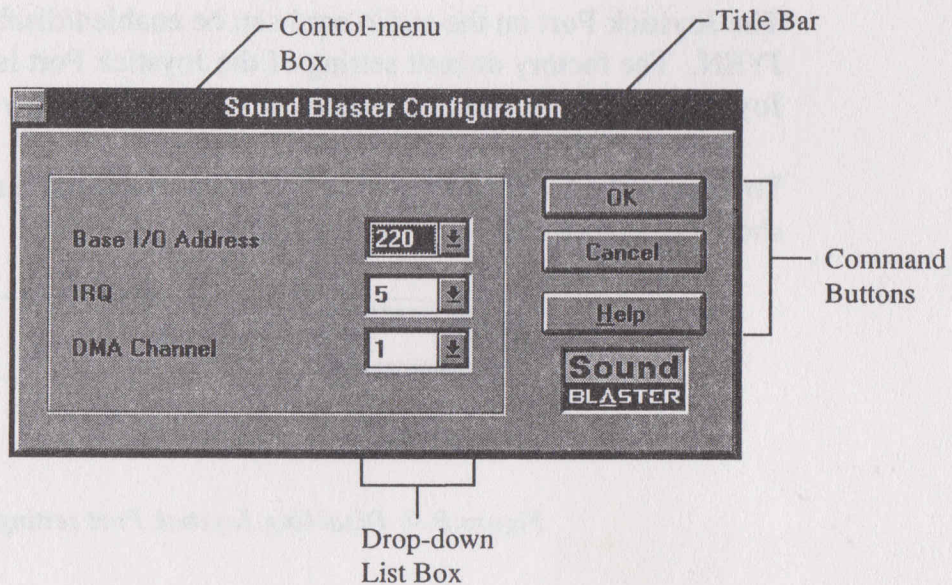


Figure B-10: The Sound Blaster Configuration dialog box.

2. Click  to select from the drop-down list.
The drop-down list appears.
3. Select the settings desired.
4. Repeat steps 2 and 3 for the rest of the settings desired.
5. Choose one of the followings:
 - ☐ To save the new settings, choose **OK**, or
 - ☐ To quit without saving the new settings, choose **Cancel**.

When prompted to select the base I/O address and MIDI Port address of the Audio interface, you should select the ones that match those on the card. Remember to reboot your system for the changes to take effect.

To run **DIAGNOSE**:

1. Change to your sound directory.
2. Type **DIAGNOSE** and press <Enter>.
3. Follow the instructions on the screen.

For more information, type **DIAGNOSE /?** and press <Enter>.

If you run **DIAGNOSE** with the /s switch from the DOS prompt, it reads the **BLASTER** environment for the settings on the card and programs the card with those settings. Take note that it does not modify your system files. You can also put **DIAGNOSE /s** after the **SET BLASTER** entry in the **AUTOEXEC.BAT** file if you do not want to load **CTSB2.SYS** during bootup.

Troubleshooting

This appendix provides some tips and strategies for some of the problems you might encounter with the audio card either during installation or normal use.

Problems in DOS

The following are problems you might encounter in DOS.

Problem : SOUND or/and BLASTER environment(s) could not be found.

Cause : The command to set up the Sound or/and BLASTER environment(s) might not be included in the AUTOEXEC.BAT file.

The Sound environment specifies the directory location of the audio card while Blaster environment specifies the I/O address, interrupt, and DMA channel settings of the audio card. Both environment strings need to be set up in the DOS environment. When you install the audio card's software, the commands to set up the environments are automatically added to the AUTOEXEC.BAT file so that both environment strings are set up whenever your system is started or restarted. Whenever you make changes to the environment strings, it is advisable that the changes be reflected in the AUTOEXEC.BAT file.

Solution : To add the command to set up the BLASTER environment in the respective system files, run DIAGNOSE (see Appendix B). To set up the SOUND environment, use a text editor to insert the statement SET SOUND=C:\SB into the AUTOEXEC.BAT file. Remember to reboot your system for changes to take effect.

- Problem** : Error message "Out of environment space".
- Cause** : The system environment space is used up.
- Solution** : Add the following statement to the CONFIG.SYS file:
Shell=C:\COMMAND.COM /E:512 /P
/E defines a new size for the system environment space. You can choose a higher value if the environment size is already 512 bytes. (Normally, the next value is 1024 bytes.) For more information on the above statement, refer to your DOS manual.

Problems in Windows

The following are problems you might encounter when in Windows.

- Problem** : No sound when running the Windows applications for the audio card.
- Cause** : One of the sound drivers might not be included in the SYSTEM.INI file.

Solution : Check the SYSTEM.INI file by following the steps below:

1. Choose Run from the File menu in Program Manager.
2. Type **SYSEDIT** in the Command Line text box and choose OK.
3. You should see the following:

```
[drivers]
timer=timer.drv
midimapper=midimap.drv
```

```
Wave=sb20snd.drv
MIDI1=sb20fm.drv
MIDI2=sb20snd.drv
[sndblst.drv]
Port=220
Int=5
DmaChannel=1
```

If one or more of the drivers are missing, run **INSTALL** (see Chapter 2).

Problems with Sound

The following are general problems you might encounter when trying to use sound.

Problem : No output from the 8-bit digitized sounds when running the test program.

Cause : It might be due to an interrupt conflict.

Solution : Refer to Appendix B, "Changing Hardware Settings", on how to change the interrupt.

Problem : No output from the 8-bit digitized sounds when running the test program.

Cause : It might be due to the DMA channel conflict.

Solution : Since the audio card uses only DMA channel 1. Change the DMA settings of your other hardware.

Resolving Hardware Conflicts

Hardware conflicts occur when two or more peripheral devices contend for the same signal lines or channels. Conflicts between the audio card and another peripheral device might be due to the settings of the I/O address, interrupt, or DMA channel. The audio card's factory default settings are:

Base I/O address	:	220H
Interrupt	:	5
8-bit DMA channel	:	1

To resolve hardware conflicts:

1. Change the hardware settings of your audio card or the peripheral card in your system if the peripheral card is using the audio card's setting. To change the DMA channel and interrupt settings, you can run the DIAGNOSE program (see Appendix B, "Changing Hardware Settings").
2. If you are unsure of the settings of the peripheral cards, you can isolate the source of the problem by temporarily removing all cards except the audio card and other essential cards such as disk controller. After that, add the card back one at a time until the card that is causing the conflict is found.

Technical Support

We are committed to giving you the best product as well as technical support. When you call, fax or write, please have the following information:

- ☐ Base I/O address used by your card.
- ☐ Error message on the screen and how it came about.
- ☐ Information on the adapter card that conflicts with your card.

Inside U.S.A., Canada and South America, contact:

CREATIVE LABS, INC. Technical Support
1523 Cimarron Plaza, Stillwater, OK 74075. U.S.A.
Tel : (405) 742 6622
Fax : (405) 742 6633
BBS : (405) 742 6660

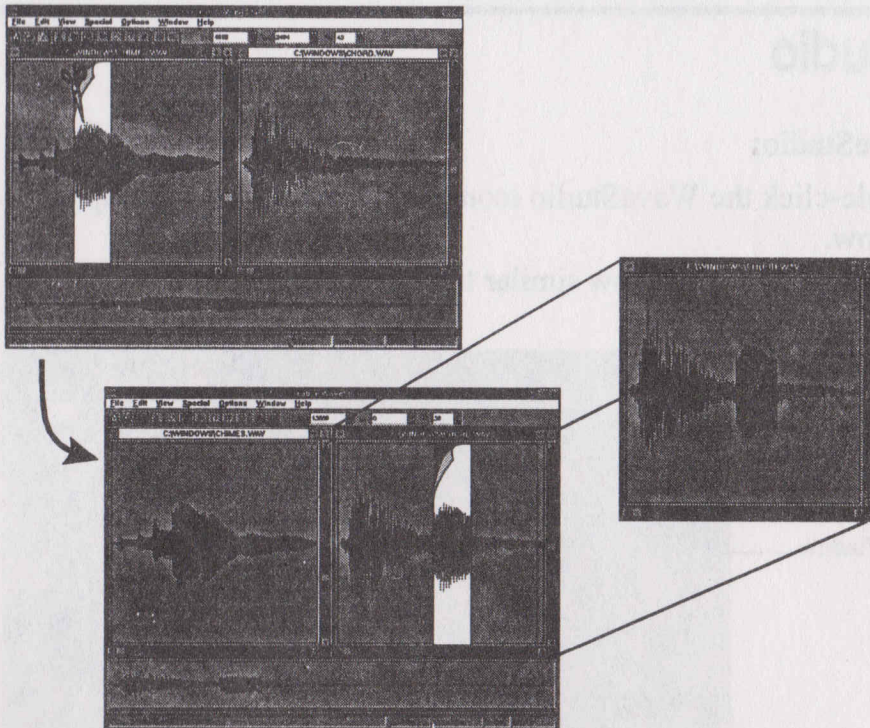
Operating Hours (U.S.A. Central Time)
Mon-Sun : 8:00 am-10:00 pm
Public Holidays : Closed

Outside USA, Canada and South America, contact:

CREATIVE TECHNOLOGY LTD. Technical Support
67 Ayer Rajah Crescent, #03-18. Singapore 0513.
Tel : (65) 870 0433
Fax : (65) 773 0353
BBS : (65) 776 2423

Operating Hours (Singapore Time)
Mon-Fri : 9:00 am-6:00 pm
Sat : 9:00 am-1:00 pm
Sun & Public Holidays : Closed

User's Reference



1

Creative WaveStudio

Creative WaveStudio brings you to the next wave of sound editing. This easy-to-use yet powerful application allows you to record, play, and edit wave data in the Windows environment. It also allows you to enhance your wave data with special effects.

This chapter provides you with information on using WaveStudio and all its powerful features. It is organized as follows:

- ☐ Starting WaveStudio
- ☐ Understanding the WaveStudio Interface
- ☐ Using the Mouse
- ☐ Understanding the WaveStudio Menus
- ☐ Working with WaveStudio
- ☐ Customizing WaveStudio
- ☐ Using WaveStudio Effectively
- ☐ Quitting WaveStudio

Starting WaveStudio

To start WaveStudio:

1. Double-click the WaveStudio icon in your audio card's group window.

The WaveStudio window similar to Figure 1-1 appears.

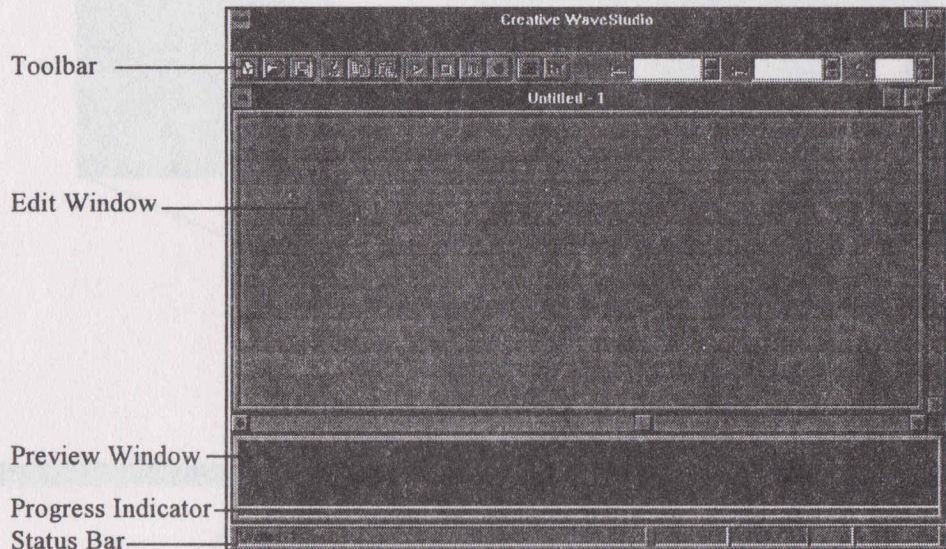


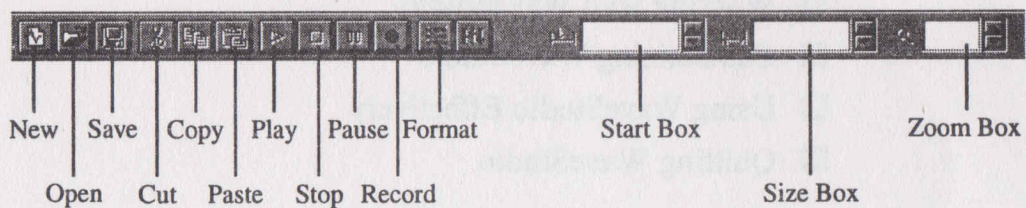
Figure 1-1: The WaveStudio window.

Understanding the WaveStudio Interface

The WaveStudio interface has four main features. They are the Toolbar, Edit Window, Preview Window, and Status Bar.

Toolbar

The Toolbar comprises several buttons and control boxes for file and wave operations.





Opens a new window containing no data.



Opens an existing wave file.



Saves the active wave file.



Cuts the selected data of the wave file.



Copies the selected data of the wave file.



Pastes cut or copied data onto the wave file.



Plays the wave file that is currently active in WaveStudio.



Stops the playback of a wave file.



Pauses/Resumes the playback of a wave file.



Records a wave file.



Sets the default recording format.



Displays the starting position of the wave data selection. You can specify the position by typing a numerical value in the text box or use the scroll arrows to select the starting position.



Displays the size of the wave data selection. You can type the size in the text box or use the scroll arrows to increase or decrease the size.

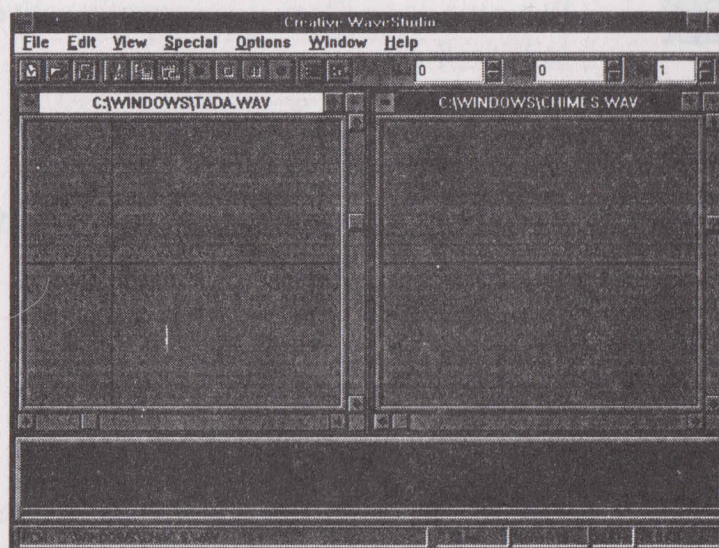


Displays the zoom ratio of the wave file displayed. You can type the ratio in the text box or use the scroll arrows to increase or decrease the ratio. The smaller the value, the larger the magnification.

Edit Window

The Edit Window is the area where the content of a wave file is displayed. You can open several Edit Windows at a time and display them in cascades, vertical or horizontal tiles, or as icons. This allows you to perform editing functions like copying data from one file to another easily and quickly.

For a better view of the data displayed in the Edit Window, use the horizontal scroll bar to select the data for viewing and the vertical scroll bar to zoom into (or out of) the data.



Preview Window

The Preview Window displays the entire wave data in the current active Edit Window. When you place your mouse cursor in the Preview Window, it changes to . You can also select a portion of the file for editing in the Preview Window.

Within the Preview Window is the Progress Indicator showing the progress of the wave file during playback. If the entire file is selected, the Progress Indicator moves from the beginning to the end of the file. If only a portion of the file is selected, the Progress Indicator moves from the beginning to the end of that selection.

Status Bar

The Status Bar displays information related to the wave file in the active Edit Window and each menu command when selected. A window has to contain data before the information relevant to the file is displayed in the Status Bar.



Using the Mouse



An easy way of selecting wave files for editing is to use the mouse. The following shows you how to use the mouse to select the data.

To select a portion of the data:

- ☐ Hold down the left mouse button anywhere on the Edit Window and drag the mouse. Once the desired portion of the data has been selected, release the left mouse button.

To select the entire data:

- ☐ Double-click the wave data in the Edit Window.

To select data from a specific position back to the beginning of the data:

- ☐ Hold down the left mouse button at the specific position and drag the mouse above the Edit Window.

To select data from a specific position to the end of the data:

- ☐ Hold down the left mouse button at the specific position and drag the mouse below the horizontal scroll bar.

Understanding WaveStudio Menus

WaveStudio has seven menus: File, Edit, View, Special, Options, Window, and Help. It also has a Context-sensitive menu that you can activate easily with your mouse.

File Menu

The File menu contains the following commands:

New	Creates a new window without any data.
Open	Loads an existing wave file.
Close	Closes an open wave file.
Close All	Closes all open wave files.
Save	Saves changes made to the wave file.
Save As	Saves the wave file with a new name.
Save All	Saves all open wave files.
Exit	Quits WaveStudio.

WaveStudio keeps a record of the last four wave files you have opened by displaying them on the File menu after the Exit command. To open any of the files, select the file with the left mouse button.

Edit Menu

The Edit menu contains the following editing commands:

Undo	Restores the wave file to the state last saved.
Cut	Copies and then removes the selected portion of the wave data.
Copy	Copies the selected portion of the data.
Paste	Pastes cut or copied wave data into the Edit Window. If you have selected a portion of the data, that portion is replaced. Otherwise, WaveStudio pastes the data at the cursor.
Paste Mix	Mixes cut or copied wave data with the one in the Edit Window. When you play the wave file, you will hear both sounds together.
Delete	Deletes a selected portion of the data. Unlike the Cut command, the data is not copied first.

Crop To Selection	Deletes the entire data except the portion selected.
Select All	Selects the entire wave file in the Edit Window. You can also do this by double-clicking the mouse anywhere within the Edit Window.

View Menu

The following commands on the View menu allow you to customize the WaveStudio workspace:

Preview	Toggles the Preview Window on or off.
Toolbar	Toggles the Toolbar on or off.
Status Bar	Toggles the Status Bar on or off.
Fit Wave In Window	Scales (adjusts the zoom ratio) the wave display to fit the size of the Edit Window.
Actual Size	Resets the zoom ratio of the wave display in the Edit Window to its actual size (1:1).
Cursor Position	Displays the wave file at the starting position of the wave selection.
Cursor End	Displays the wave file at the ending position of the wave selection.
Zoom	Zooms into the portion of the wave file selected. (You should select the desired portion before using this function.)

Special Menu

The commands on the Special menu allow you to add special effects to wave files. These commands are:

Reverse	Reverses the playback of the entire or selected portion of the wave file. For stereo files, there are options for reversing either channel.
Add Echo	Adds echo effect to the entire or selected portion of the wave file. For stereo files, there are options for adding echo to either channel.
Invert Waveform	Inverts the wave data for the entire or selected portion of the wave file. For stereo files, there are options for inverting either channel.
Rap!	Repeats the selected portion of the wave file.
Insert Silence	Inserts silence into the portion of the wave file selected.

Force To Silence	Silences the portion of the wave file selected. For stereo files, there are options for silencing either channel.
Fade In	Fades into the entire or selected portion of the wave file. For stereo files, there are options for fading either channel.
Fade Out	Fades out the entire or selected portion of the wave file. For stereo files, there are options for fading either channel.
Swap Channels	Swaps the entire or selected portion of the wave file between the left and right channels. For stereo files only.
Pan Left to Right	Pans the entire or selected portion of the wave file from left to right. For stereo files only.
Pan Right to Left	Pans the entire or selected portion of the wave file from right to left. For stereo files only.
Phase Shift	Shifts one channel of the entire or selected portion of the wave file to the right, causing a delay during playback. For stereo files only.
Convert Format	Converts the entire wave file between mono and stereo, 8-bit and 16-bit, and different frequencies.
Modify Frequency	Modifies the frequency (playback rate) of the entire wave file.
Amplify Volume	Changes the volume level of the entire or selected portion of the wave file.

Options Menu

The following commands on the Options menu allow you to change WaveStudio's default settings:

Record Settings	Sets the default record settings.
Customize Colors	Customizes WaveStudio's display colors.
Display in Bytes	Displays wave selection information in bytes.
Display in Samples	Displays wave selection information in samples.
Display in Milliseconds	Displays wave selection information in milliseconds.
Always on Top	Toggles WaveStudio as the topmost window.

Window Menu

The commands on the Window menu allow you to organize the Edit Windows when several wave files are open. For more information regarding these commands, refer to your Microsoft Windows manual.

Help Menu

The descriptions of the commands on the Help menu are:

Contents	Displays contents for WaveStudio Help.
Search for Help on	Searches for a topic in WaveStudio Help.
System Info	Displays information about Windows and your system such as CPU and available memory.
About WaveStudio	Opens a window displaying copyright information.

Context-Sensitive Menu

The context-sensitive menu appears when you click the right mouse button in the Edit Window. The commands that appear on the menu depend on the content of the Edit Window. The commands include:

Play	Plays the entire or selected portion of the wave file in the Edit Window.
Record	Records the wave file. If the current active window in the Edit Window is an open file, the content in the open file will be replaced by the recorded file.
Stop	Stops the playback of a wave file.
Fit Wave In Window	Scales (adjusts the zoom ratio) the wave display to fit the size of the Edit Window.
Actual Size	Resets the zoom ratio of the wave display in the Edit Window to its actual size (1:1).
Cursor Position	Displays the wave file at the starting position of the wave selection.
Zoom	Zooms into the portion of the wave file selected.
New	Creates a new window.
Open	Loads an existing wave file.
Save	Saves changes made to the wave file.

Working With WaveStudio

WaveStudio has a user-friendly interface and working with it is easy. This section shows you how to specify the format for wave files and open, save, and mix wave files.



Although WaveStudio allows you to edit 16 bit wave files, Sound Blaster 2.0 supports 8 bit wave playback and recording only. You can convert your 16 bit wave files to 8 bit format before playing on your Sound Blaster 2.0.

Specifying Wave Formats

Before recording a wave file, you need to ensure the format of the file is specified correctly. Wave format refers to the sound channel and sampling rate and size of the file.

To specify the wave format:

1. Select Record Settings from the Options menu.

The Record Settings dialog box similar to Figure 1-2 appears.

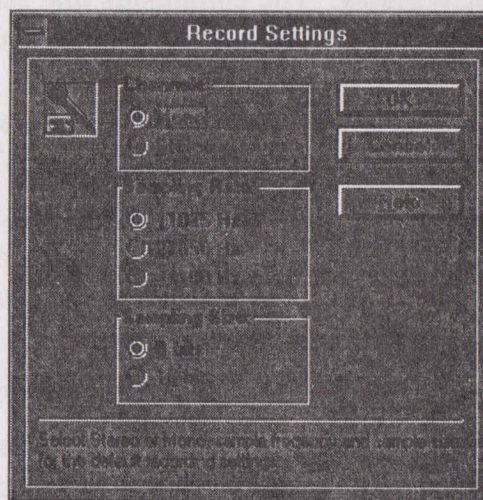


Figure 1-2: The Recording Settings dialog box.

2. Choose OK.

Opening Wave Files

You can open existing wave files using the Open command from the File menu or the drag-and-drop method.

To use the Open command:

1. Select Open from the File menu.

The Open Sound File dialog box similar to Figure 1-3 appears:

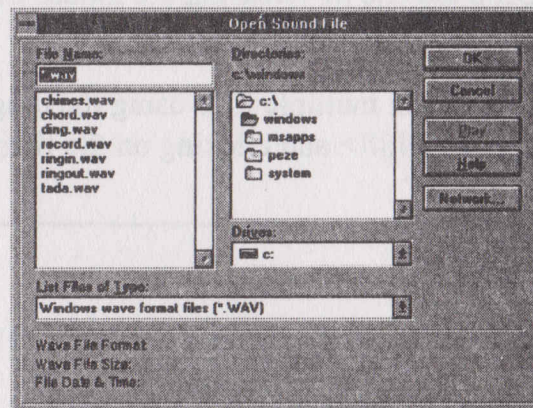


Figure 1-3: The Open Sound File dialog box.

2. Select the file you wish to open from the File Name list box. (You may have to specify the directory where your file (.WAV) resides. To listen to the playback of the wave file selected, choose Play.)
3. Choose OK.



If you select a file with raw data (.RAW) or Creative's Voice format (.VOC), a dialog box prompting you to confirm the conversion of the file to .WAV format is displayed.

To use the drag-and-drop method:

1. Start File Manager and open the directory containing the wave file.
2. Arrange both windows so that the file and the WaveStudio window can be seen.
3. Hold down the left mouse button as you drag the file into the WaveStudio window.
A  icon appears while you are dragging the file.
4. Drop the file by releasing the mouse button.
The file opens automatically.

You can also open multiple files using the drag-and-drop method by holding down <Shift> and clicking on the files in the File Manager.

Recording Wave Files

WaveStudio allows you to record new wave files or over existing files.

To record a new file:

1. Choose New on the Toolbar.
2. Choose Record on the Toolbar.

The New Recording dialog box similar to Figure 1-4 appears.

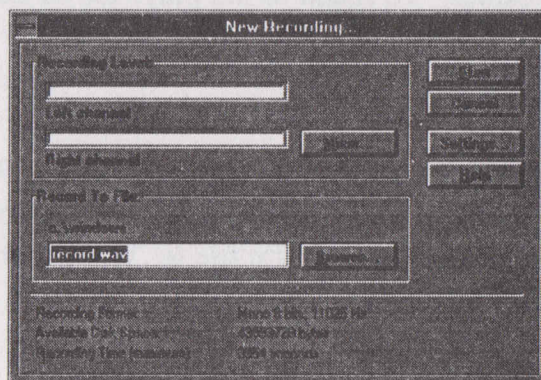


Figure 1-4: The New Recording dialog box.

3. Ensure the settings in the dialog box are specified correctly.
 - ☐ Check the path and file name created in the Record To File group box. You can change the file name and directory by using the Browse button.

- ☐ Check the recording format shown at the bottom of the dialog box. You can change the format by choosing the Settings button.
- ☐ Check your system's storage space shown at the bottom of the dialog box. If there is insufficient storage space for your file, free up more disk space or choose another drive before recording the file.

4. Choose Start.

To record over an existing file:

1. Activate the file you want to record over.
2. Choose Record on the Toolbar.

The Record Over dialog box similar to Figure 1-5 appears.

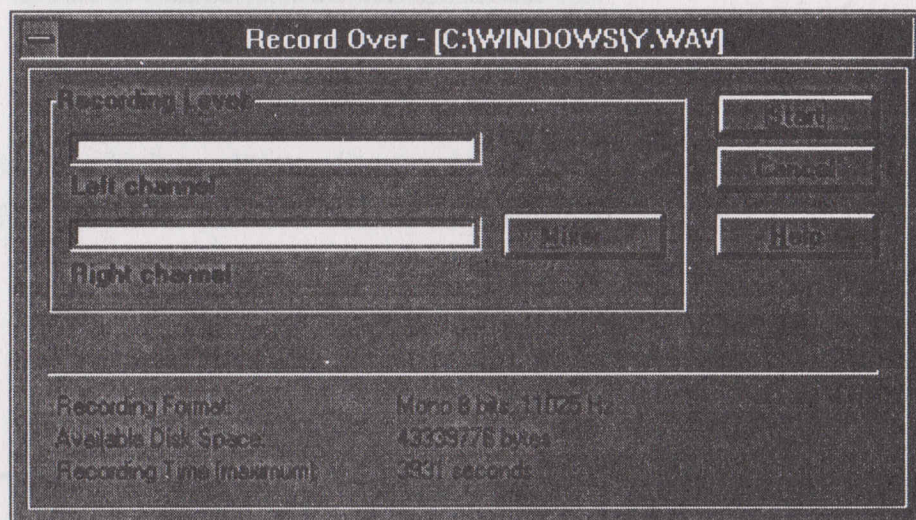


Figure 1-5: The Record Over dialog box.

3. Choose Start.

Saving Wave Files

To save a wave file:

1. Choose Save on the Toolbar or select Save from the File menu.
2. Enter the name of the file and the path if prompted.
3. Choose OK.

To save a wave file with a new name or format:

1. Select Save As from the File menu.

The Save Sound File dialog box similar to Figure 1-6 appears.

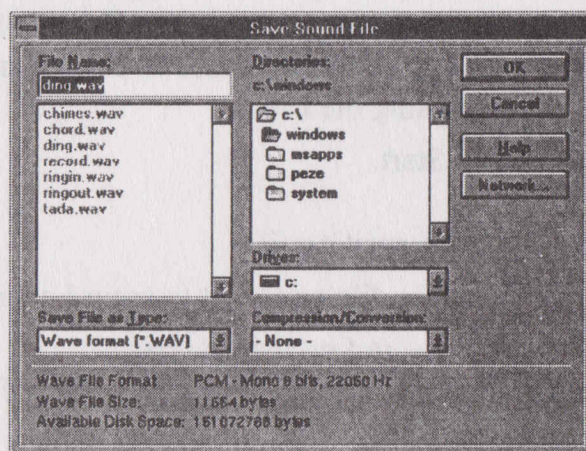


Figure 1-6: The Save Sound File dialog box.

2. Enter a new name for the file and the path if prompted.
3. Select the desired file format from the Save File as Type drop-down list box.
4. Choose OK.

Mixing Data of Wave Files

When you mix the data of two wave files, you are actually adding the data of one file to another to create a new file. After mixing, you can play back the new file to hear the new sound generated.

To mix the data contents of two wave files:

1. Activate the first (source) file and select the desired portion of the data for mixing.
2. Select Copy from the Edit menu.
The data copied is stored in an internal buffer.
3. Activate the second (target) file and select the location where you want the copied data to be mixed.
4. Select Paste Mix from the Edit menu.

The Paste Mix dialog box similar to Figure 1-7 appears.

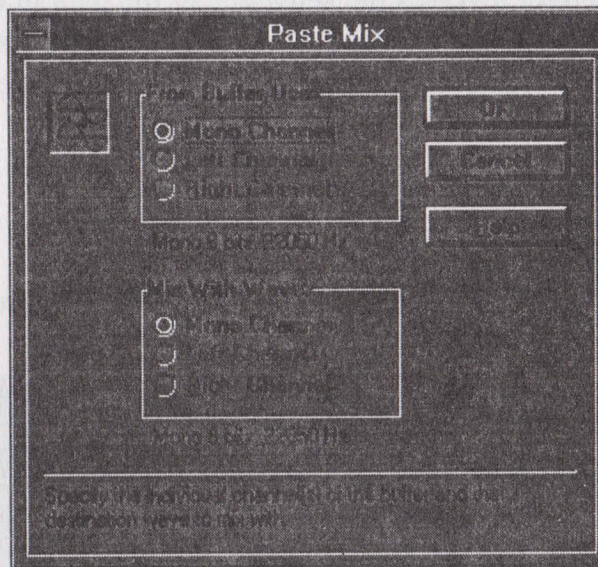


Figure 1-7: The Paste Mix dialog box.

5. Select the desired channel(s) for copying data from the source file in the From Buffer Use group box and for mixing data with the target file in the Mix With Wave group box.
 - ☐ Select Mono Channel for mono file.
 - ☐ Select Left Channel, Right Channel, or both channels for stereo file.
6. Choose OK.

If a portion of the target file is not selected, the data is mixed at the cursor position. If a portion of the target file is selected, the copied data in the buffer is mixed with the portion selected.



You cannot mix 8-bit with 16-bit wave data. However, you can convert both files to 8-bit sampling size before mixing them.

Adding Special Effects

WaveStudio allows you to enhance your wave files with special effects from the Special menu. These effects include Reverse, Add Echo, Invert Waveform, Rap!, Insert Silence, Force to Silence, Fade In and Fade Out, Swap Channels, Pan Left to Right and Pan Right to Left, Phase Shift, Convert Format, Modify Frequency, and Amplify Volume.

Reverse

This effect reverses the sequence of the data in the wave file such that the sound is played backwards. You can specify a selected portion of the file to be reversed. If a portion of the file is not selected, the entire file will be reversed.

To reverse a file:

1. Select Reverse from the Special menu.
The Reverse dialog box similar to Figure 1-8 appears.

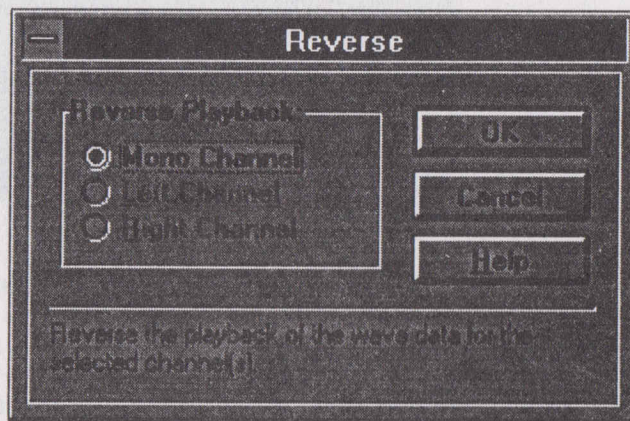


Figure 1-8: The Reverse dialog box.

2. Select the desired channel(s). (No options are available for editing a mono file.)
☐ Select Left Channel, Right Channel, or both channels for stereo file.
3. Choose OK.

Add Echo

This effect modifies data in the wave file to give an echo effect. You can create a metallic sound effect by continually applying Add Echo to the same wave file until you have achieved the desired result.

To add echo to a file:

1. Select Add Echo from the Special menu.
The Add Echo dialog box similar to Figure 1-9 appears.

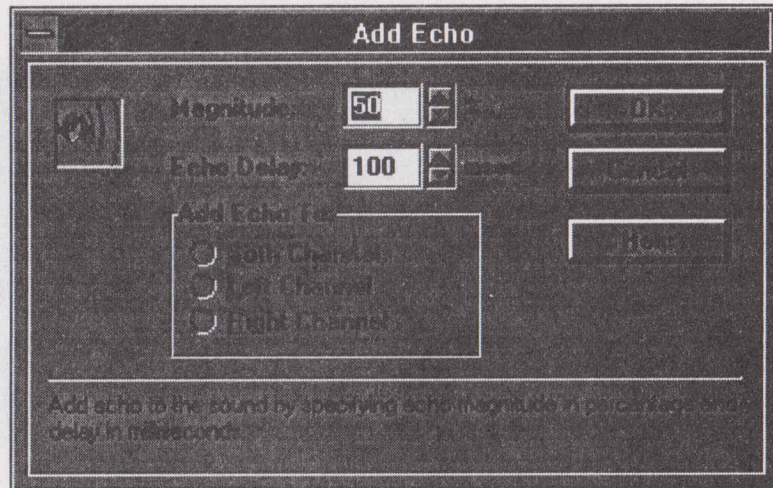


Figure 1-9: The Add Echo dialog box.

2. Enter the echo magnitude (loudness of the echo) in the Magnitude text box.
3. Enter the echo delay (the time between the actual sound and the echo) in the Echo Delay text box.
4. Select the desired channel for stereo file.
5. Choose OK.

Invert Waveform

This effect inverts the wave file along its horizontal axis. You can specify a selected portion of the file to be inverted. If a specific portion of the file is not selected, the entire file will be inverted. To create an unusual effect, invert only one channel of a stereo file.

To invert a file:

1. Select Invert Waveform from the Special menu.

The Invert Waveform dialog box similar to Figure 1-10 appears.

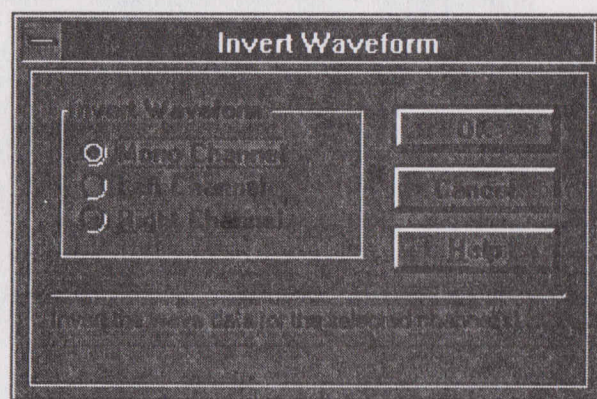


Figure 1-10: The Invert Waveform dialog box.

2. Select the desired channel(s). (No options are available for editing a mono file.)
 - ☐ Select Left Channel, Right Channel, or Both Channels for stereo wave file.
3. Choose OK.

Rap!

This feature repeats the selected portion of the wave file. This is useful when you want to create a jerky or stuttering effect for your voice files.

To repeat a selection:

1. Select a portion of the file.
2. Select Rap! from the Special menu.

Insert Silence

This effect inserts silence into a selected portion of the wave file.

To insert silence into a file:

1. Select a portion of the wave file.
(The length of the silence depends on the length of the portion selected.)
2. Select Insert Silence from the Special menu.

You will see a straight line representing the silence inserted into the portion selected.

Force to Silence

This effect mutes the selected portion of the wave file such that the selected portion will not be heard during playback.

To mute a file:

1. Select a portion of the file.
2. Select Force to Silence from the Special menu.
The Force to Silence dialog box similar to Figure 1-11 appears.

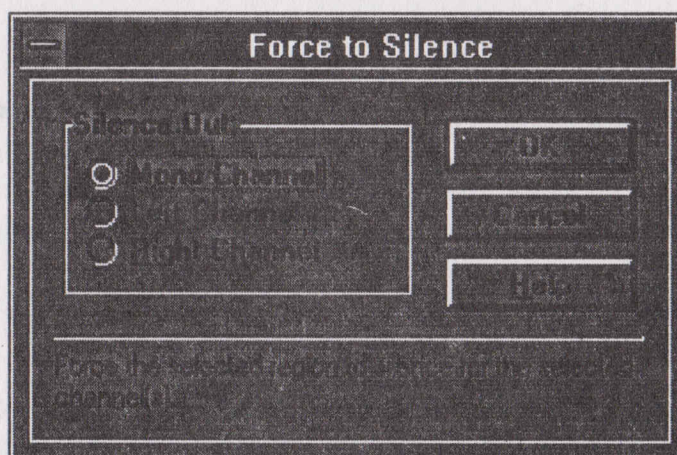


Figure 1-11: The Force To Silence dialog box.

3. Select the desired channel(s). (No options are available for editing a mono file.)
☐ Select Left Channel, Right Channel, or Both Channels for stereo wave file.
4. Choose OK.
The selected portion is replaced by a straight line.

Fade In and Fade Out

You can create a fading in (soft to loud) or fading out (loud to soft) effect for your wave files.

To use Fade In (or vice-versa):

1. Select Fade In from the Special menu.
The Fade In dialog box similar to Figure 1-12 appears.

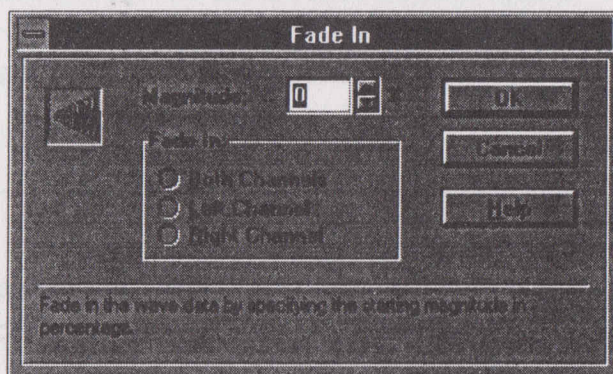


Figure 1-12: The Fade In dialog box.

2. Enter the starting magnitude in the Magnitude text box.
3. Select the desired channel(s) for stereo files.
4. Choose OK.



For Fade In, the file will be linearly faded in from the starting magnitude (volume) to a 100% magnitude (volume). For Fade Out, the file will be linearly faded out from a 100% magnitude (volume) to the ending magnitude (volume).

Swap Channels

This effect swaps the entire or selected portion of wave data between the left and right channels. This effect is only applicable to stereo files.

To swap the channels of a wave:

1. Select Swap Channels from the Special menu.

Pan Left to Right and Pan Right to Left

The Pan Left to Right effect pans the data of wave files from the left to the right channel. The Pan Right to Left effect pans the data from the right to the left channel. This feature is useful if you want to simulate the movement of a sound source from one end of the sound stage to the other.

To use Pan Left to Right (or vice-versa):

1. Select Pan Left to Right from the Special Menu.

Phase Shift

This effect allows you to delay the playback of the selected channel of stereo wave files.

To create a Phase Shift effect:

1. Select Phase Shift from the Special menu.

The Phase Shift dialog box similar to Figure 1-13 appears.

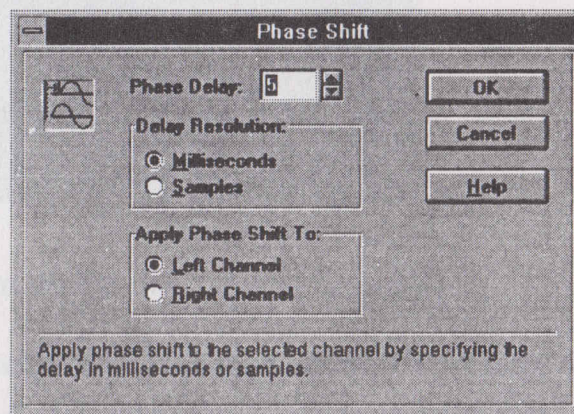


Figure 1-13: The Phase Shift dialog box.

2. Select the desired measurement unit from the Delay Resolution group box.
3. Enter the desired delay in the Phase Delay text box.
4. Choose the desired channel from the Apply Phase Shift To group box.
5. Choose OK.

You can convert a mono to a stereo wave file by applying this effect. This will give the converted mono file a pseudo stereo effect.

Convert Format

This effect allows you to convert between mono and stereo files, 8-bit and 16-bit files, and different frequencies.

To convert the format of a file:

1. Select Convert Format from the Special menu.
The Convert Format dialog box similar to Figure 1-14 appears.

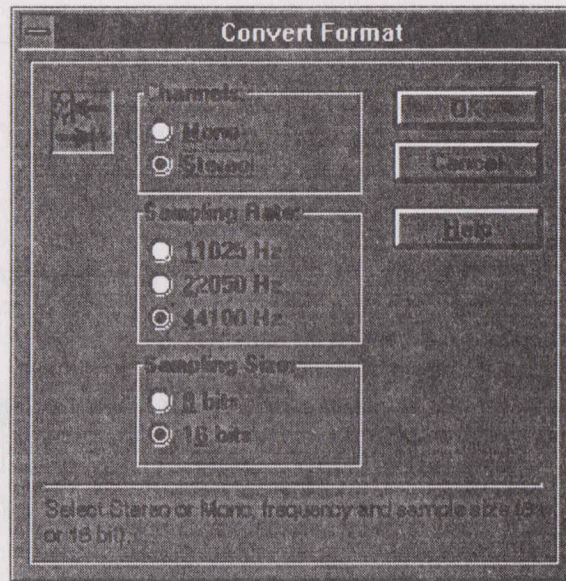


Figure 1-14: The Convert Format dialog box.

2. Select the desired channel from the Channels group box.
3. Select the desired sampling rate and size from the Sampling Rate and Sampling Size group boxes respectively.



Conversion is a complex process and may take a long time to complete, depending on the size of the file.

Amplify Volume

This effect allows you to change the volume of wave files. It can be applied to the entire or selected portion of the wave file.

To change the volume of a file:

1. Select Amplify Volume from the Special menu.

The Amplify Volume dialog box similar to Figure 1-15 appears.

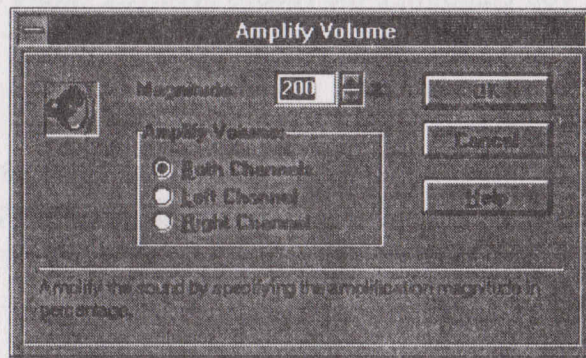


Figure 1-15: The Amplify Volume dialog box.

2. Enter the magnitude in the Magnitude text box.
3. Select the desired channel(s).
4. Choose OK.

Customizing WaveStudio

WaveStudio allows you to customize the default settings for recording, Creative Mixer, and the display color of the WaveStudio interface.

Recording

When you customize the record settings, future recordings of wave files will be based on those settings.

To customize the record settings:

1. Select Record Settings from the Options menu.
The Record Settings dialog box similar to Figure 1-2 appears.
2. Specify the desired settings.
3. Choose OK.

Display Color

You can customize the display color of both the Edit and Preview Windows. WaveStudio also allows you to reset the colors of both windows to their default color scheme.

To customize the display color:

1. Select Customize Colors from the Options menu.
The Customize Colors dialog box similar to Figure 1-16 appears.

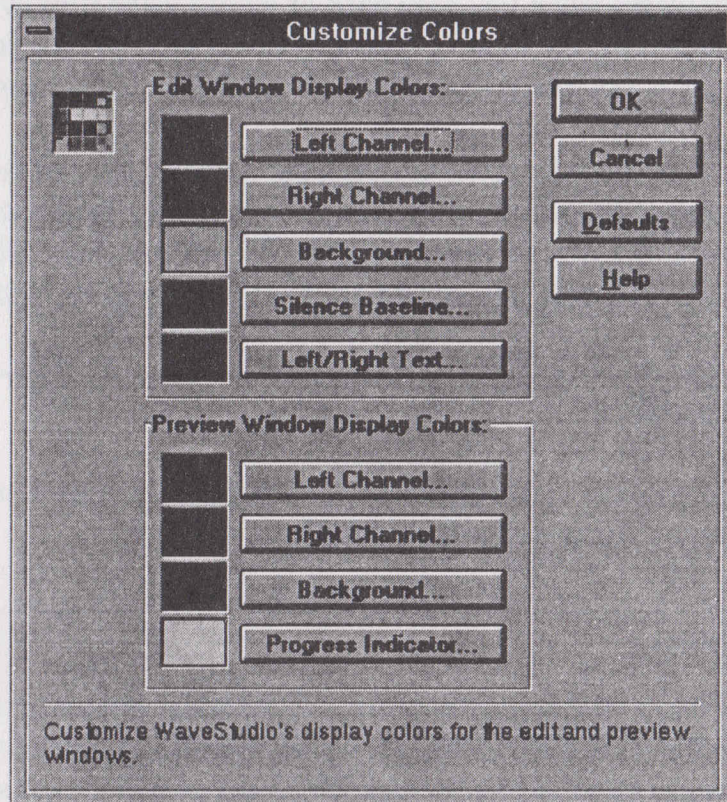


Figure 1-16: The Customize Colors dialog box.

2. Select the display element(s) you want to customize in the Edit Window Display Colors and Preview Window Display Colors group boxes.

A color dialog box appears.

3. Select the color you want.
4. Choose OK.

To restore the display element(s) to its original color scheme:

1. Choose Defaults.

Using WaveStudio Effectively

To use WaveStudio effectively, you need to know the amount of memory needed to run WaveStudio, how to manage your files and work with compressed files.

Memory Requirements

WaveStudio requires about 1MB of memory. Memory requirement increases when you play back or record wave files as sufficient memory is needed for the buffers. It is recommended that you run WaveStudio on at least a 386-based system with 4 MB of RAM and under Windows 3.1.

When you open a file for editing, WaveStudio will only allocate certain amount of memory for storing the necessary information and will not load the entire file into memory. The file will be edited directly from your hard disk. As such, you can edit files as large as your hard disk can contain.

File Management

This section explains how you can optimize your system for speed and manage your wave files effectively.

System Optimizing

When you record wave data, WaveStudio will store recorded data directly to the hard disk. High resolution recording of data would take much longer to write to your disk if it is not optimized for speed.

You can reduce the amount of time your system spends reading and writing data by compacting your hard disk using a disk-compaction utility such as DEFRAG and installing a hard disk cache such as SMARTDrive.

Number of Open Files

WaveStudio does not limit the number of files you can open. But the number of files WaveStudio can open at a time depends on how you specify your operating system configuration. For more information on how to do that, consult your operating environment's documentation.

Use of DOS SHARE Utility

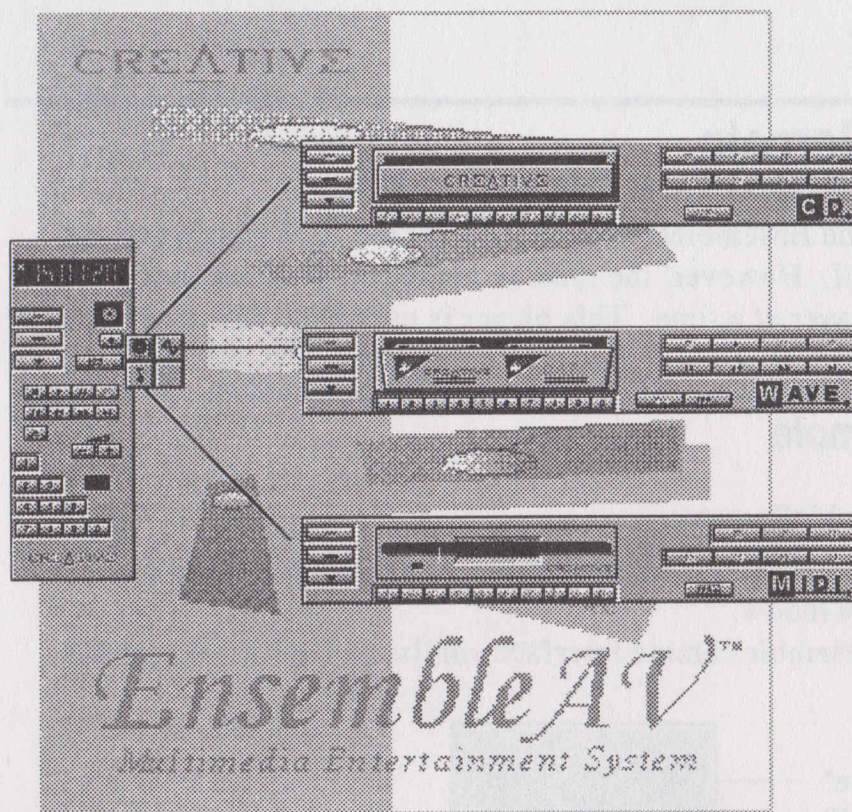
It is recommended you use the DOS SHARE utility to allow proper file sharing and locking. This will prevent you from accidentally deleting a file while WaveStudio is accessing it. For more information on how to use this utility, consult your DOS documentation.

Quitting WaveStudio

To quit WaveStudio:

1. Select Exit from the File Menu.

If changes to the file have not been saved, a dialog box will prompt you to save the changes.



2

Creative EnsembleAV

Creative EnsembleAV is an assortment of players that can be controlled with the EnsembleRemote, a multi-player control interface that resembles the remote control of a stereo hi-fi system. With it, you can play audio through different players independently or concurrently. And if you wish to have more direct control over the audio, you can invoke the players.

This chapter is organized as follows:

- ☐ Using EnsembleRemote
- ☐ Using EnsembleWave
- ☐ Using EnsembleMIDI

Using EnsembleRemote

You can use the EnsembleRemote to control the EnsembleWave and EnsembleMIDI. However, the remote control only allows you to control one player at a time. This player is called the active player.

Starting EnsembleRemote

To start EnsembleRemote:

1. Double-click the EnsembleRemote icon in your audio card's group window.

The EnsembleRemote interface similar to Figure 2-1 appears.

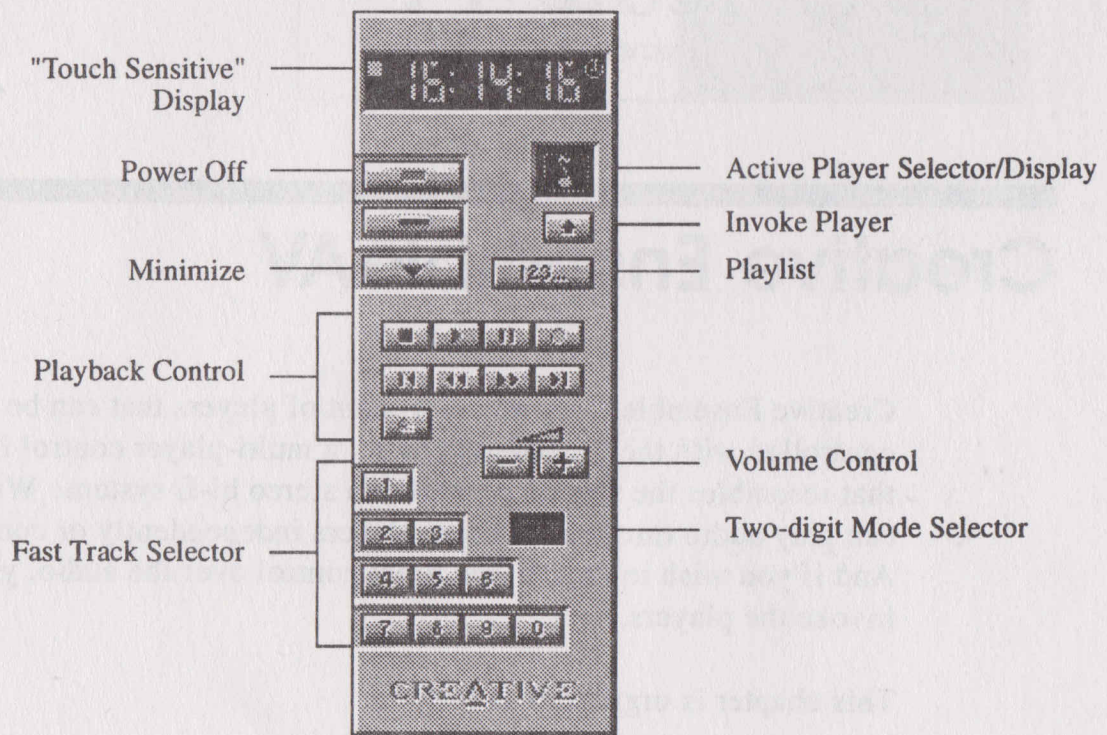


Figure 2-1: The EnsembleRemote interface.

Knowing the EnsembleRemote

The EnsembleRemote consists of the following features:

- ☐ “Touch Sensitive” Display
- ☐ Menu Button
- ☐ Minimize Button
- ☐ Active Player Selector/Display
- ☐ Invoke Player Button
- ☐ Playlist Button
- ☐ Playback Control Buttons
- ☐ Volume Control Buttons
- ☐ Fast Track Selector
- ☐ Two-digit Mode Selector
- ☐ Power Off Button

“Touch Sensitive” Display

By clicking the “Touch Sensitive” Display, you get to switch among the following:

- ☐ Current system time 
- ☐ Title of the current playlist 
- ☐ Title of the current track 

Menu Button

The Menu button  displays the Control menu showing the following list of commands:

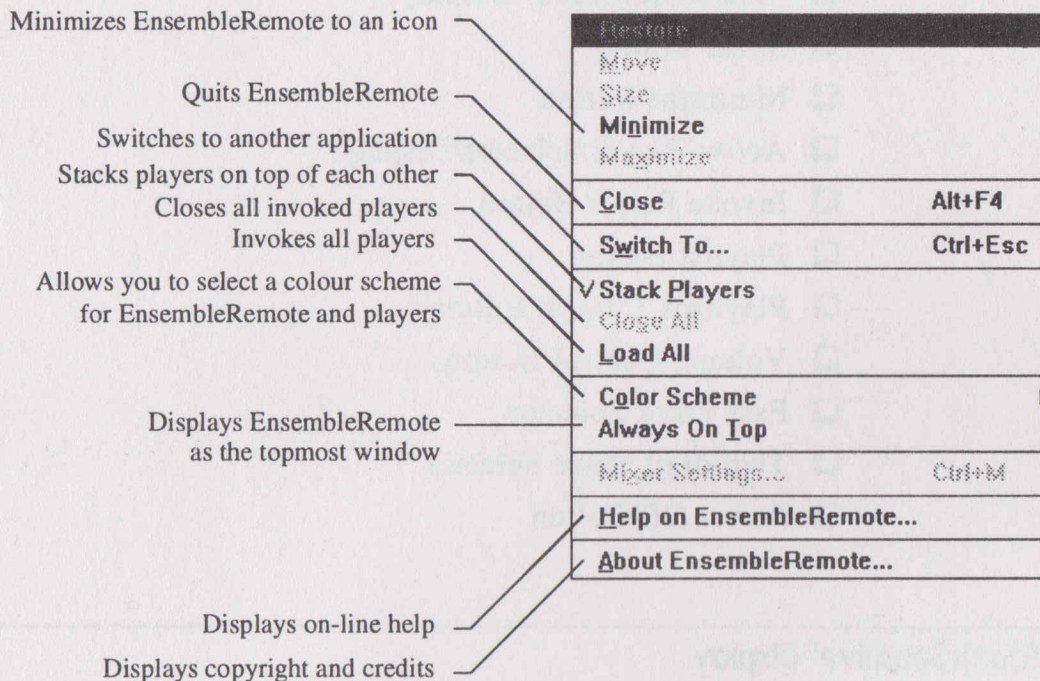


Figure 2-2: The EnsembleRemote Control Menu.

Minimize Button

The Minimize Button  minimizes the EnsembleRemote to an icon.

Active Player Selector/Display

The Active Player Selector/Display displays the icon of the active player when you select it. The icons of the players are:



EnsembleMIDI



EnsembleWave

Invoke Player Button

The Invoke Player button  invokes a player.

Playlist Button

The Playlist button  allows you to compile the desired tracks/sound files for playing through the Playlist dialog box.

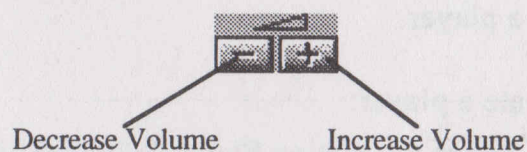
Playback Control Buttons

The Playback Control buttons allow you to perform the playback operations on the active player.

-  Stops the track/sound file.
-  Plays the track/sound file.
-  Pauses the track/sound file.
-  Records sound from a selected source. It applies to EnsembleWave.
-  Plays the previous track/sound file.
-  Rewinds the track/sound file.
-  Forwards the track/sound file.
-  Plays the next track/sound file.

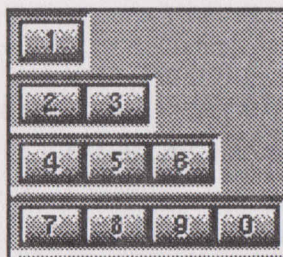
Volume Control Buttons

The Volume Control buttons decrease and increase the volume.



Fast Track Selector

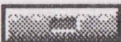
The Fast Track Selector consists of buttons that allow you to select a track/sound file in the playlist. For example, to play track/sound file two, choose button 2.



Two-digit Mode Selector

The Two-digit Mode Selector allows you to select a track/sound file number above ten in the playlist when it is highlighted .

Power Off Button

The Power Off button  allows you to quit the EnsembleRemote.

Activating a Player

Before you can control a player with the EnsembleRemote, you need to activate a player.

To activate a player:

1. Choose the Active Player Selector/Display.
The Player Selection buttons appear.



2. Choose the button of the player you want to activate.
The player becomes active and the icon of the active player appears on the Active Player Selector/Display.

Playing Sound Files

You can play sound files using the Playback Control buttons. EnsembleRemote plays sound files from the active player's playlist. You can also select a track and play it using the Fast Track Selector.

To play a sound file using the Fast Track Selector:

1. Choose the Two-digit Mode Selector if the track number is above ten.
2. Choose the button(s) from the Fast Track Selector that correspond to the track you want to select. If you want to select track 10, choose button 0.



If you choose a track number that does not exist, the last track in the playlist will be selected.

Compiling a Playlist

You can compile a playlist by choosing the Playlist button. When you choose this button, a Playlist dialog box appears allowing you to perform operations such as add, delete, and rearrange tracks/sound files.



For more information on how to compile the playlist, refer to the relevant section of the active player on how to compile it.

Invoking a Player

You can invoke a player to perform more specific operations such as playing tracks in random order and previewing the first few seconds of each track in the playlist. When you invoke a player, you make it active on the EnsembleRemote.

To invoke a player:

1. Choose the Invoke Player button.
The Player Selection buttons appear.



2. Choose the button of the player.

Alternatively, if you want to invoke the active player, simply double-click the Active Player Selector/Display.

Using the Hot Keys



You can use hot keys to perform operations on EnsembleRemote. The following are some of the hot keys used:

<A>	Pauses the track/sound file.
	Plays the previous track/sound file.
<C>	Activates the Active Player Selector/Display.
<Ctrl+D>	Switches "Touch Sensitive" Display.
<D>	Decreases the volume.
<F>	Plays the next track/sound file.
<F1>	Activates the on-line help.
<H>	Activates the Invoke Player button.
<K>	Rewinds the track/sound file.
<L>	Invokes the playlist.
<N>	Minimizes EnsembleRemote to an icon.
<O>	Quits EnsembleRemote.
<P>	Plays the track/sound file.
<R>	Records the wave file.
<S>	Stops the track/sound file.
<Spacebar>	Confirms selection.
<T>	Activates the Two-digit Mode Selector.
<U>	Increases the volume.
<W>	Fast-forwards the track/sound file.
<0> to <9>	Selects the tracks/sound file.

Using EnsembleWave

You can use EnsembleWave to perform operations such as playing a wave file and compiling a playlist.

Starting EnsembleWave

To start EnsembleWave:

1. Double-click the EnsembleWave icon in your audio card's group window.

The EnsembleWave interface similar to Figure 2-3 appears.

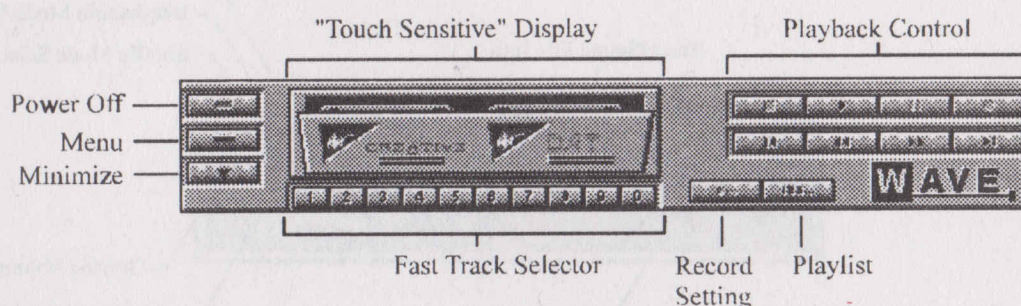


Figure 2-3: The EnsembleWave interface.

Alternatively, invoke EnsembleWave from EnsembleRemote.

Knowing the EnsembleWave Interface

The EnsembleWave interface consists of the following features:

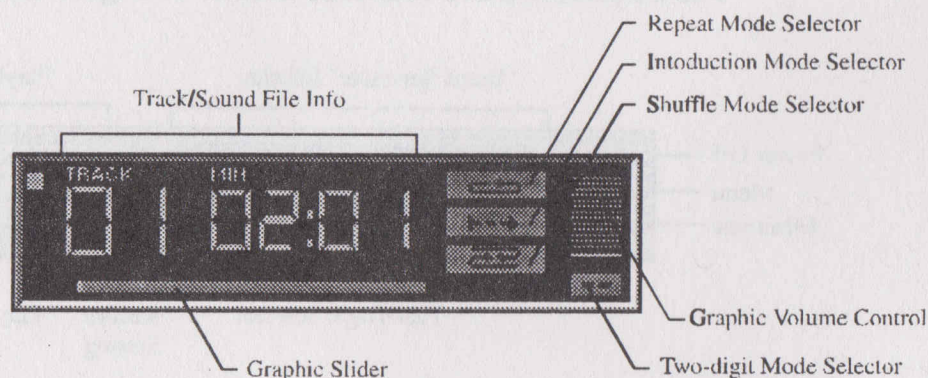
- ☐ "Touch Sensitive" Display
- ☐ Menu Button
- ☐ Minimize Button
- ☐ Playlist Button
- ☐ Playback Control Buttons
- ☐ Record Setting Button
- ☐ Fast Track Selector
- ☐ Power Off Button

"Touch Sensitive" Display

By clicking the "Touch Sensitive" Display, you can switch among the following:

- ☐ Wave file playing status
- ☐ Titles of the wave file and playlist
- ☐ Number and elapsed time of the playing wave file

For file and playlist titles or file number and duration display, the following "Touch Sensitive" Display appears.



Graphic Slider

Indicates the percentage of the current wave file that is playing. It also allows you to control the position of the playing wave file.

Graphic Volume Control

Shows the volume level of the player.

Two-digit Mode Selector

Allows you to select a wave file number above ten in the playlist when it is highlighted.

Repeat Mode Selector

Repeats the whole playlist when the final wave file is played.

Introduction Mode Selector

Plays the first few seconds of all wave file in the playlist.

Shuffle Mode Selector

Randomly plays the wave files in the playlist.

Menu Button

The Menu button  displays the Control menu showing the following list of commands:

Minimizes EnsembleWave to an icon

Quits EnsembleWave

Switches to another application

Invokes CreativeWaveStudio to edit wave data

Displays on-line help

Displays copyright and credits

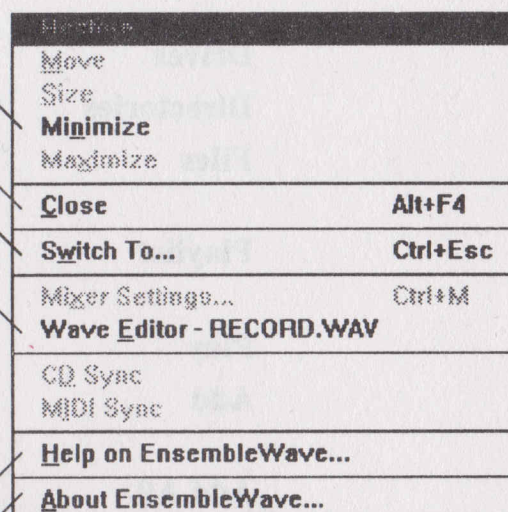


Figure 2-4: The EnsembleWave Control Menu.

Minimize Button

The Minimize button  minimizes the EnsembleWave to an icon.

Playlist Button

The Playlist button  allows you to compile the desired wave files for playing. When you choose this button, the Wave Playlist dialog box similar to Figure 2-5 appears:

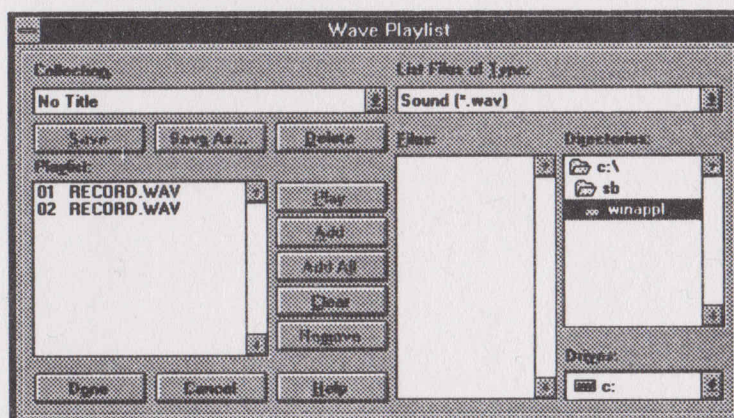


Figure 2-5: The Wave Playlist dialog box.

The Wave Playlist dialog box contains the following components:

Collection	Allows you to give a title to your playlist.
List Files of Type	Allows you to specify the types of files you want to view in the Files list box.
Drives	Displays the selected drive.
Directories	Displays the directory search path.
Files	Displays files specified in the List Files of Type edit box.
Playlist	Displays the files you have included in the playlist.
Play	Plays the selected wave files.
Add	Adds selected wave files to the Playlist list box.
Add All	Adds all the wave files to the Playlist list box.
Clear	Clears the wave files in the Playlist list box.
Remove	Removes selected wave files from the Playlist list box.
Done	Confirms the compilation of wave files in the Playlist list box.
Cancel	Cancels changes made in the Playlist list box. The playlist reverts to its last saved copy.
Help	Displays the on-line help facility.
Save	Saves the playlist using the name provided in the Collection edit box.
Save As	Saves the playlist with a new name.

Playback Control Buttons

The Playback Control buttons allow you to perform the playback operations.



Stops the wave file.



Plays the wave file.



Pauses the wave file.



Records a wave file from a selected source.



Plays the previous wave file in the playlist.



Quickly rewinds the wave file.



Quickly forwards the wave file.



Plays the next wave file in the playlist.

Record Setting Button

The Record Setting button  displays a dialog box that allows you to define the settings for recording.

Fast Track Selector

The Fast Track Selector allows you to select and play a wave file in the playlist.



Power Off Button

The Power Off button  quits the EnsembleWave.

Playing Wave Files

You can play wave files by using the Playback Control buttons and Fast Track Selector.

To play a wave file using the Fast Track Selector:

1. Choose the Two-digit Mode Selector if your wave file number is above ten.
2. Choose a button from the Fast Track Selector corresponding to the wave file you want to select. If you want to select wave file 10, choose button 0.



If you choose a wave file number that does not exist, the last wave file in the playlist will be selected.

If you want to start playing a wave file from a certain position, you can use the Graphic Slider to change the wave file's playing position. You can do this before playing it or while it is playing.

To start playing the wave file at a different position:

1. Click and hold down the left mouse button on the Graphic Slider and go to the position that you want to start the wave file at.
2. When the highlighted portion of the Graphic Slider has reached the position you have chosen, release the mouse button.
If your player is already playing, the player will immediately go to the position you have chosen and start playing.
3. If your player is not playing, choose Play to start playing the wave file from the position you have chosen.

Adjusting the Volume

You can adjust the volume of EnsembleWave using the Graphic Volume Control.

To adjust the volume:

1. Click and hold down the left mouse button on the Graphic Volume Control.
2. Adjust the volume to the level you want.

Working with the Wave Playlist

A playlist is a collection of tracks that are grouped in some order for playing. You can compile the tracks in the playlist using the Wave Playlist list box.

Compiling the Playlist

To compile the playlist:

1. Choose the Playlist button.
The Wave Playlist dialog box similar to Figure 2-5 appears.
2. Perform the desired operations on the playlist:
 - ☐ Preview wave files
 - ☐ Add wave files
 - ☐ Remove wave files
 - ☐ Rearrange or name wave files
3. Choose Done when you are satisfied with the compilation of the playlist.
Choose Cancel to cancel all changes made to the playlist.

Adding Wave files to the Playlist

To add wave file(s) to the playlist:

1. Select the wave file(s) to add to the playlist from the Files list box.
2. Choose Add to add the wave file(s) to the Playlist list box.
Choose Add All to add all the wave files in the Files list box to the Playlist list box.

Previewing Wave files

To preview wave file(s):

1. Select the wave file(s) from the Playlist or Files list box.
2. Choose Play.
The wave file starts playing.



You can also preview a wave file by double-clicking the wave file in a list box.

Removing Wave files from the Playlist

To remove wave file(s) from the playlist:

1. Select the wave file(s) from the Playlist list box.
2. Choose Remove.
Choose Clear to remove all the wave files in the Playlist list box.

Selecting Wave files in the Playlist

You can select multiple wave files for previewing, adding, or removing by holding down <Ctrl> or <Shift> while you choose them.

- ☐ Pressing <Ctrl> allows you to randomly select the wave files.
- ☐ Pressing <Shift> allows you to select a group of adjacent tracks when you select the first and last wave file in the group.

Rearranging Wave files in the Playlist

If you are not in “shuffle” mode, you can rearrange the wave files in the playlist in the order you like using the right mouse button.

“Shuffle” mode is a playing mode where wave files are randomly arranged in the playlist.

To rearrange a wave file in the playlist:

1. Click and hold down the right mouse button on the wave file in the Playlist list box and drag it to the new position.
The wave file will move to that position and the preceding wave files will be rearranged below it in the Playlist list box.



If you are in “shuffle” mode, rearranging the order will not change the playing order of the wave files.

Naming the Playlist

Once you have compiled your playlist, you may want to give the playlist a title.

To give your playlist a title:

1. Choose Save As.

The New Collection dialog box similar to Figure 2-6 appears.

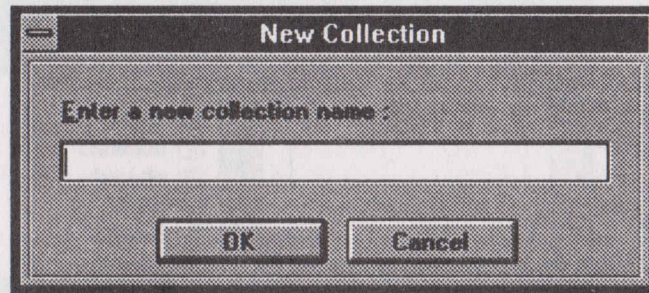


Figure 2-6: The New Collection dialog box.

2. Type the title of the playlist in the edit box.

3. Choose OK.

If you choose Cancel, you will return to the Playlist dialog box without saving the title.

Defining Recording Settings

To define the settings of a recording:

1. Choose the Record Setting button.

The Choose Wave Format dialog box similar to Figure 2-7 appears.

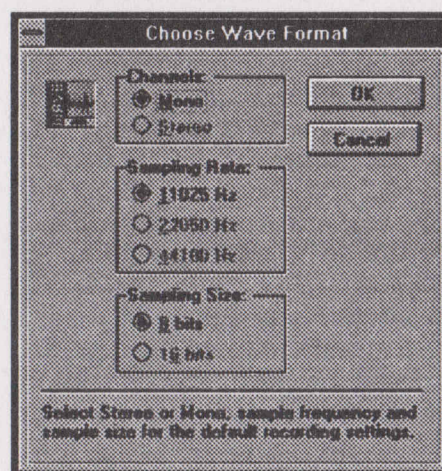


Figure 2-7: The Choose Wave Format dialog box.

2. Choose OK.

Recording a Wave File

To record a wave file:

1. Choose the Record button.

The Wave Recording dialog box similar to Figure 2-8 appears.

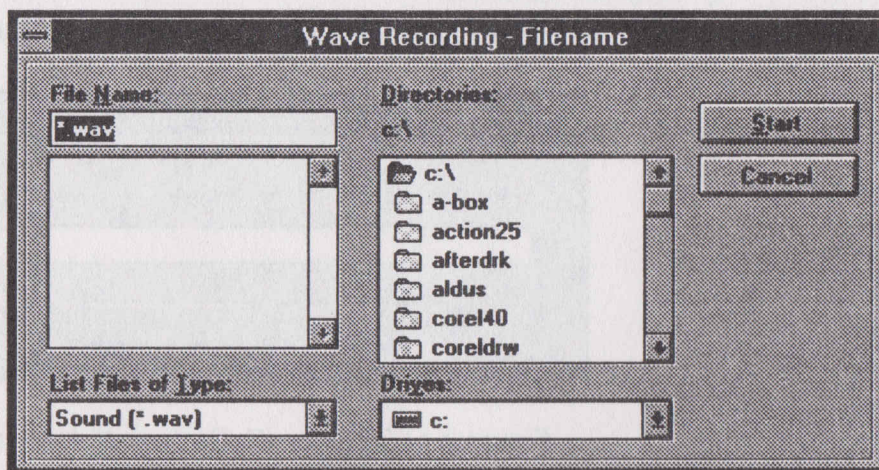


Figure 2-8: The Wave Recording - Filename dialog box.

2. Enter the directory path and name of the file you want to record to.
3. Choose Start.
The recording starts.

Using the Hot Keys



You can use hot keys to perform operations on EnsembleWave. The hot keys are:

<A>	Pauses the wave file.
	Plays the previous wave file.
<Ctrl+D>	Switches "Touch-Sensitive" Display.
<F>	Plays the next wave file.
<F1>	Activates on-line help.
<G>	Activates the Graphic Slider.
<H>	Activates the Shuffle Mode Selector.
<I>	Activates the Introduction Mode Selector.
<K>	Rewinds the wave file.
<L>	Invokes the playlist.
<M>	Activates the Repeat Mode Selector.
<N>	Minimizes EnsembleWave to an icon.
<O>	Quits EnsembleWave.
<P>	Plays the wave file.
<R>	Records the wave file.
<S>	Stops the wave file.
<Spacebar>	Confirms selection.
<T>	Activates the Two-digit Mode Selector.
<W>	Fast-forwards the wave file.
<0> to <9>	Select wave files.

Using EnsembleMIDI

You can use EnsembleMIDI to perform operations such as playing a MIDI file and compiling a playlist.

Starting EnsembleMIDI

To start EnsembleMIDI:

1. Double-click the EnsembleMIDI icon in your audio card's group window.

The EnsembleMIDI interface similar to Figure 2-9 appears.

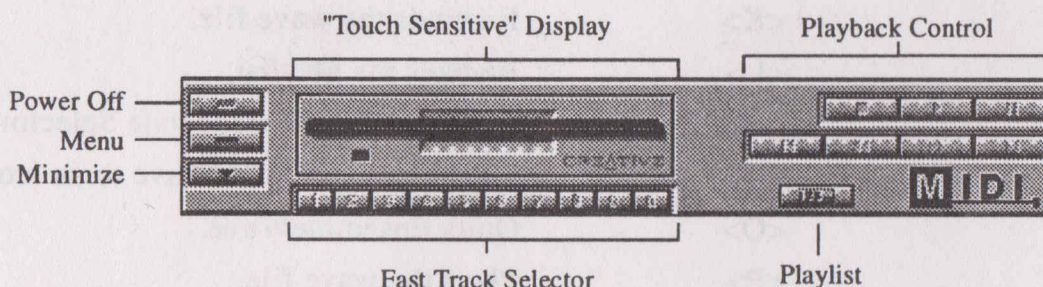


Figure 2-9: The EnsembleMIDI interface.

Alternatively, invoke EnsembleMIDI from EnsembleRemote.

Knowing the EnsembleMIDI Interface

The EnsembleMIDI interface consists of following features:

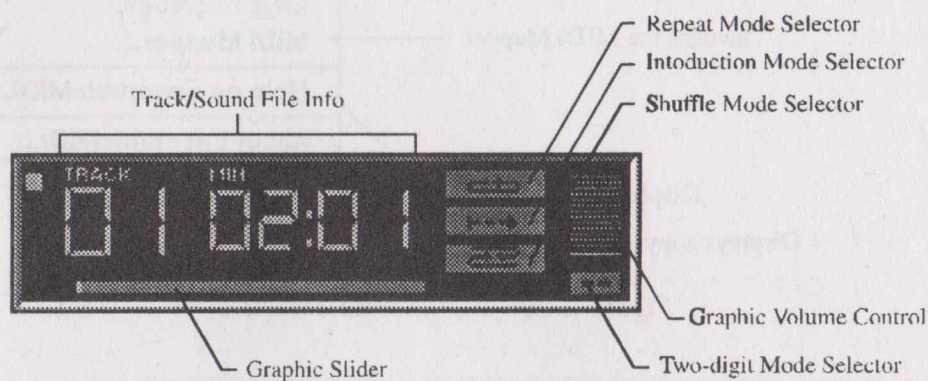
- ☐ "Touch Sensitive" Display
- ☐ Menu Button
- ☐ Minimize Button
- ☐ Playlist Button
- ☐ Playback Control Buttons
- ☐ Fast Track Selector
- ☐ Power Off Button

"Touch Sensitive" Display

By clicking the "Touch Sensitive" Display, you get to switch among the following displays:

- ☐ MIDI file playing status
- ☐ MIDI file number and elapsed time of the playing MIDI file
- ☐ Titles of the MIDI file and playlist

For file and playlist titles or file number and duration display, the following "Touch Sensitive" Display appears:



Graphic Slider

Indicates the percentage of the current MIDI file that is playing. It also allows you to control the position of the playing MIDI file.

Graphic Volume Control

Shows the volume level of the player.

Two-digit Mode Selector

Allows you to select a MIDI file number above ten in the playlist when it is highlighted.

Repeat Mode Selector

Repeats the whole playlist when the final MIDI file is played.

Introduction Mode Selector

Plays the first few seconds of all the MIDI files in the playlist.

Shuffle Mode Selector

Randomly arranges MIDI files in the playlist.

Menu Button

The Menu button  displays the Control menu showing the following list of commands:

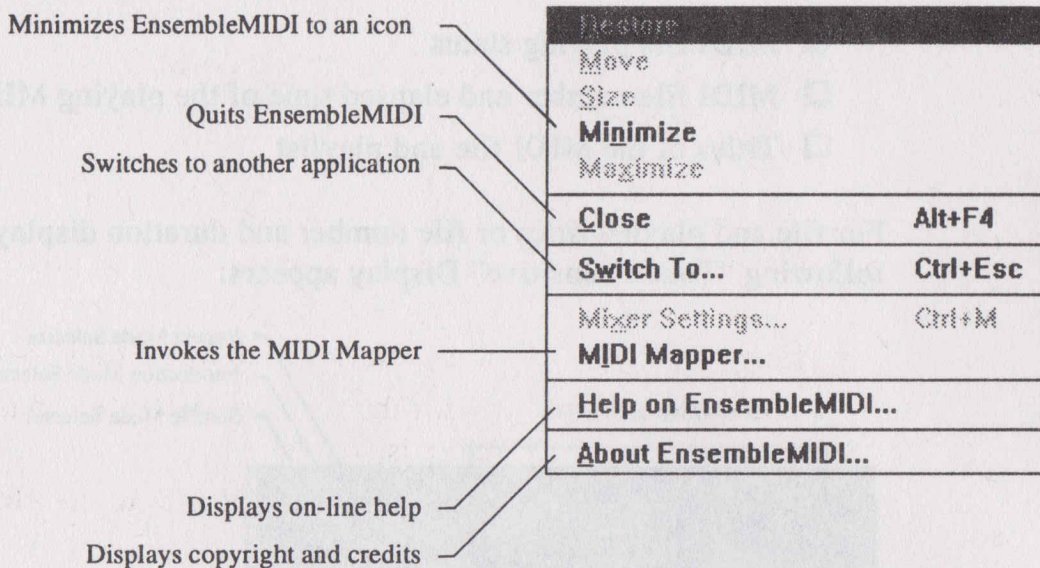


Figure 2-10: The EnsembleMIDI Control Menu.

Minimize Button

The Minimize button  minimizes the EnsembleMIDI to an icon.

Playlist Button

The Playlist button  allows you to compile a selection of MIDI files that you want to play. When you choose the Playlist button, the Playlist dialog box similar to Figure 2-11 appears:

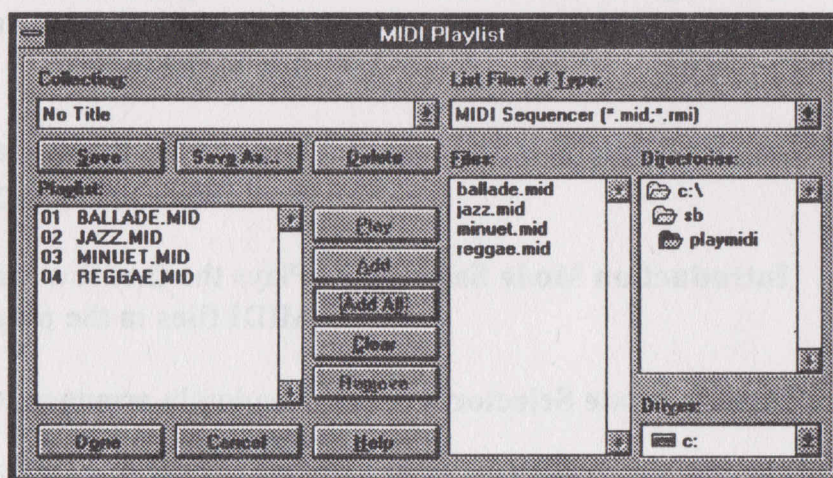


Figure 2-11: The Midi Playlist dialog box.

The MIDI Playlist dialog box contains the following components:

Collection	Allows you to name your playlist.
List Files of Type	Allows you to specify the types of files you want to view in the Files list box.
Drives	Displays the selected drive.
Directories	Displays the directory search path.
Files	Displays the files specified in the List Files of Type edit box.
Playlist	Displays the files you have included in the playlist.
Play	Plays the selected MIDI files.
Add	Adds the selected MIDI files to the Playlist list box.
Add All	Adds all the MIDI files to the Playlist list box.
Clear	Clears the MIDI files in the Playlist list box.
Remove	Removes selected MIDI files from the Playlist list box.
Done	Confirms the compilation of MIDI files in the Playlist list box.
Cancel	Cancels changes made in the Playlist list box. The playlist reverts to its last saved copy.
Help	Displays the on-line help facility.
Save	Saves the playlist using the name provided in the Collection edit box.
Save As	Saves the playlist with a new name.

Playback Control Buttons

The Playback Control buttons allow you to perform the playback operations.



Stops the MIDI file.



Plays the MIDI file.



Pauses the MIDI file.



Plays the previous MIDI file in the playlist.



Quickly rewinds the MIDI file in the playlist.



Quickly forwards the MIDI file.



Plays the next MIDI file.

Fast Track Selector

The Fast Track Selector allows you to select and play a MIDI file in the playlist.



Power Off Button

The Power Off button  quits the EnsembleMIDI.

Playing MIDI files

You can play MIDI files using the Playback Control buttons and Fast Track Selector.

To play a MIDI file using the Fast Track Selector:

1. Choose the Two-digit Mode Selector if your MIDI file number is above ten.
2. Choose a button from the Fast Track Selector corresponding to the MIDI file you want to select. If you want to select MIDI file 10, choose button 0.



If you choose a MIDI file number that does not exist, the last MIDI file in the playlist will be selected.

If you want to start playing a MIDI file from a certain position, you can use the Graphic Slider to change the MIDI file's playing position. You can do this before playing it or while it is playing.

To start playing the MIDI file at a different position:

1. Click and hold down the left mouse button on the Graphic Slider and go to the position you want to start the MIDI file at.
2. When the highlighted portion of the Graphic Slider has reached the position you have chosen, release the mouse button.
If your player is already playing, the player will immediately go to the position you have chosen and start playing.
3. If your player is not playing, choose Play to start playing the MIDI file from the position you have chosen.

Adjusting the Volume

You can adjust the volume of the EnsembleMIDI using the Graphic Volume Control.

To adjust the volume:

1. Click and hold down the left mouse button on the Graphic Volume Control.
2. Adjust the volume to the level you want.

Working with the MIDI Playlist

A playlist is a collection of tracks that are grouped in some order for playing. You can compile tracks in the playlist using the MIDI Playlist list box.

Compiling the Playlist

To compile the playlist:

1. Choose the Playlist button.
The MIDI Playlist dialog box similar to Figure 2-11 appears.
2. Perform the desired operations in playlist:
 - ☐ Preview MIDI files
 - ☐ Add MIDI files
 - ☐ Remove MIDI files
 - ☐ Rearrange MIDI files
 - ☐ Name the playlist
3. Choose Done when you are satisfied with the compilation of the playlist.
Choose Cancel to cancel all changes made to the playlist.

Adding MIDI files to the Playlist

To add MIDI file(s) to the playlist:

1. Select the MIDI file(s) to add to the playlist from the Files list box.
2. Choose Add to add the MIDI file(s) to the Playlist list box.
Choose Add All to add all the MIDI files in the Files list box to the Playlist list box.

Previewing MIDI files

To preview MIDI file(s):

1. Select the MIDI file(s) from the Playlist or Files list box.
2. Choose Play.
The MIDI file starts playing.



You can also preview a MIDI file by double-clicking the MIDI file in a list box.

Removing MIDI files from the Playlist

To remove MIDI file(s) from the playlist:

1. Select the MIDI file(s) from the Playlist list box.
2. Choose Remove.
Choose Clear to remove all MIDI files in the Playlist list box.

Selecting MIDI files in the Playlist

You can select multiple MIDI files for previewing, adding, or removing by holding down <Ctrl> or <Shift> while you choose them.

- ☐ Pressing <Ctrl> allows you to randomly select the MIDI files.
- ☐ Pressing <Shift> allows you to select a group of adjacent tracks when you select the first and last MIDI file in the group.

Rearranging MIDI files in the Playlist

If you are not in “shuffle” mode, you can rearrange the MIDI files in the playlist in the order you like using the right mouse button. “Shuffle” mode is a playing mode where MIDI files are randomly arranged in the playlist.

To rearrange a MIDI file in the playlist:

1. Click and hold down the right mouse button on the MIDI file in the Playlist list box and drag it to the new position. The MIDI file will move to that position and the preceding MIDI files will be rearranged below it in the Playlist list box.



If you are in “shuffle” mode, rearranging the order will not change the playing order of the MIDI files.

Naming the Playlist

Once you have compiled your playlist, you may want to give the playlist a title.

To give your playlist a title:

1. Choose Save As.
The New Collection dialog box similar to Figure 2-12 appears.

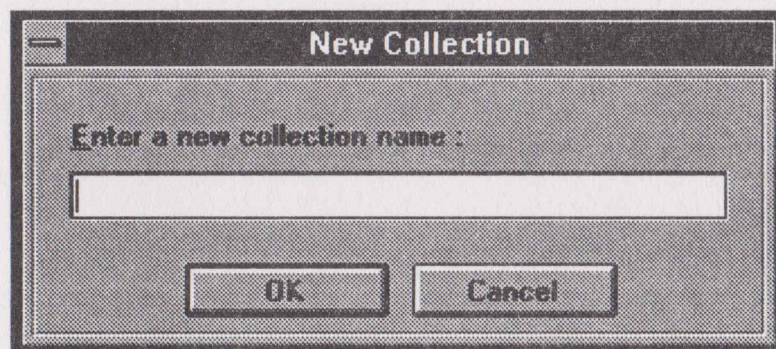


Figure 2-12: The New Collection dialog box.

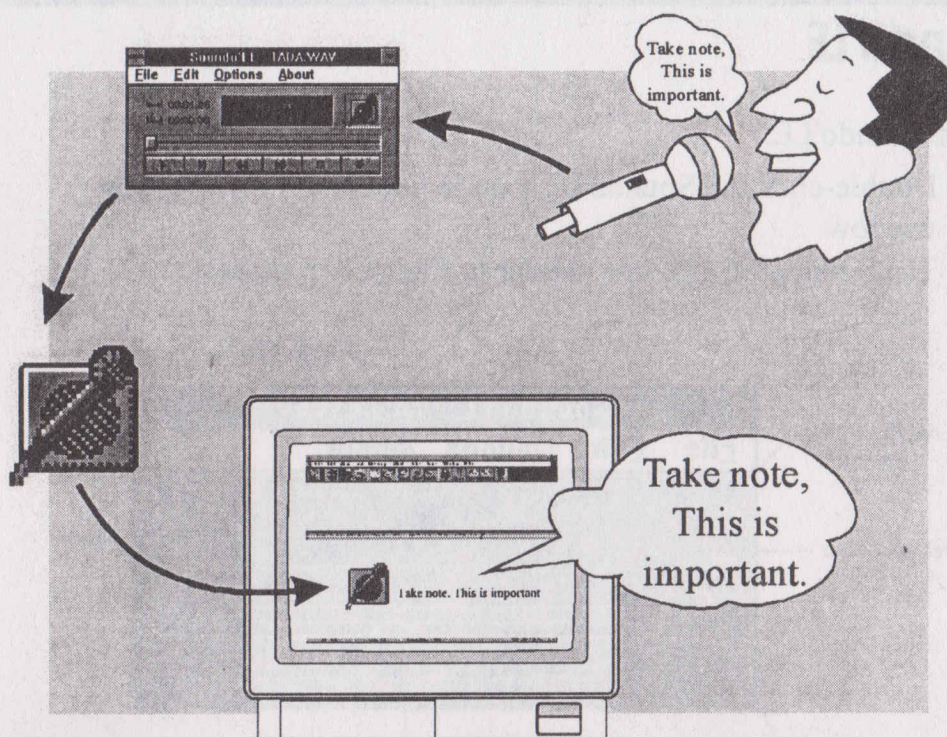
2. Type the title of the playlist in the edit box.
3. Choose OK.
If you choose Cancel, you will return to the Playlist dialog box without saving the title.

Using the Hot Keys



You can use hot keys to perform operations on EnsembleMIDI. The hot keys are:

<A>	Pauses the MIDI file.
	Plays the previous MIDI file.
<Ctrl+D>	Switches "Touch-Sensitive" Display.
<F>	Plays the next MIDI file.
<F1>	Activates on-line help.
<G>	Activates the Graphic Slider.
<H>	Activates the Shuffle Mode Selector.
<I>	Activates the Introduction Mode Selector.
<K>	Rewinds the MIDI file.
<L>	Invokes the playlist.
<M>	Activates the Repeat Mode Selector.
<N>	Minimizes EnsembleMIDI to an icon.
<O>	Quits EnsembleMIDI.
<P>	Plays the MIDI file.
<S>	Stops the MIDI file.
<Spacebar>	Confirms selection.
<T>	Activates the Two-digit Mode Selector.
<W>	Fast-forwards the MIDI file.
<0> to <9>	Select MIDI files.



3

Creative Soundo'LE

Creative Soundo'LE plays and records wave data. There are six buttons that allow you to control the wave files. They are Play, Pause, Rewind, Forward, Stop, and Record. When you play a wave file, the LED Display shows the amplitude of the sound.

Soundo'LE supports Object Linking and Embedding (OLE). With this capability, you can insert sound into other applications such as Write by linking or embedding them. For more information about Object Linking and Embedding, refer to the Microsoft Windows manual.

This chapter is organized as follows:

- ☐ Starting Soundo'LE
- ☐ The Soundo'LE Menus
- ☐ Opening a Wave File
- ☐ Playing a Wave File
- ☐ Recording a Wave File
- ☐ Selecting Recording Characteristics
- ☐ Embedding a Wave File
- ☐ Linking a Wave File
- ☐ Quitting Soundo'LE

Starting Soundo'LE

To start Soundo'LE:

1. Double-click the Soundo'LE icon in your audio card's group window.

The Soundo'LE window similar to Figure 3-1 appears.

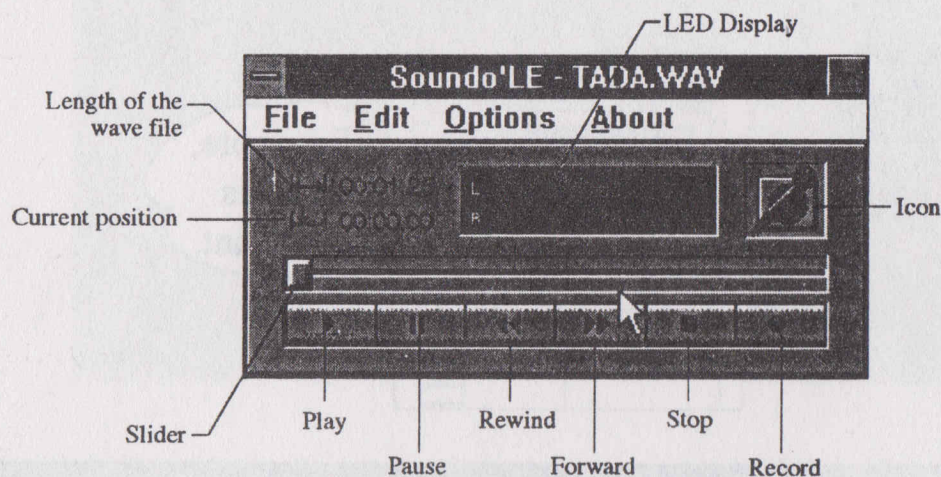


Figure 3-1: The Soundo'LE window.

The Soundo'LE Menus

Soundo'LE has four menus: File, Edit, Options, and About.

The File Menu

The commands on the File menu are:

New	Create a new wave file.
Open	Opens an existing wave file.
Save	Saves the wave file.
Save As	Saves the wave file with a new name.
Exit	Quits Soundo'LE.



Soundo'LE keeps a record of the last four wave files you have opened. They are displayed at the end of the pull-down menu in the File menu. To open one of these files, click the file with the left mouse button.

The Edit Menu

The command on the Edit menu is:

Copy Sound as an Object Copies the sound data and OLE information to the clipboard. The sound data can then be pasted onto an OLE client as an embedded or linked object.

The Options Menu

The commands on the Options menu are:

Wave Info	Displays information about the sound data such as the sampling rate and size.
Recording Settings	Allows the frequency to be selected for recording.
Always on Top	Toggles Soundo'LE as the topmost window.

The About Menu

The command on the About menu is:

About Soundo'LE	Opens a window displaying copyright information.
------------------------	--

Opening a Wave File

To open a wave file:

1. Select Open from the File menu.

The File Open dialog similar to Figure 3-2 appears.

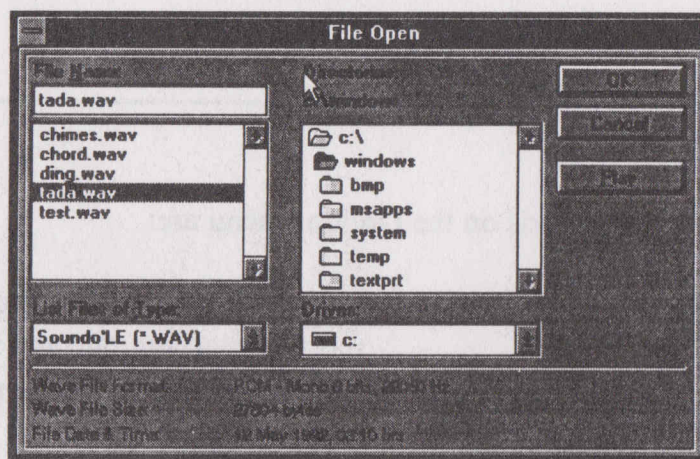


Figure 3-2: The File Open dialog box.

2. Type or select the wave file you want to open.

You can preview the file before opening it by choosing Play. You can also refer to information like the wave format, data size and its file date displayed in the dialog.

3. Choose OK.

Playing a Wave File

To play a wave file:

1. Open the wave file.
2. Choose Play.

To stop playing the wave file, choose Stop.



You can use the keyboard to perform operations in Soundo'LE. For instance, you can use either <Tab> or the left and right arrow keys to move to the various buttons on the Soundo'LE window. To choose a button, press <Spacebar>.

You can also move around the opened wave file with the aid of the slider. Simply select the slider thumb and drag with the mouse. Alternatively, you can use the left and right arrow keys.

Recording a Wave File

To record a wave file:

1. Select New from the File menu.
2. Choose Record.

The Recording dialog box similar to Figure 3-3 appears.

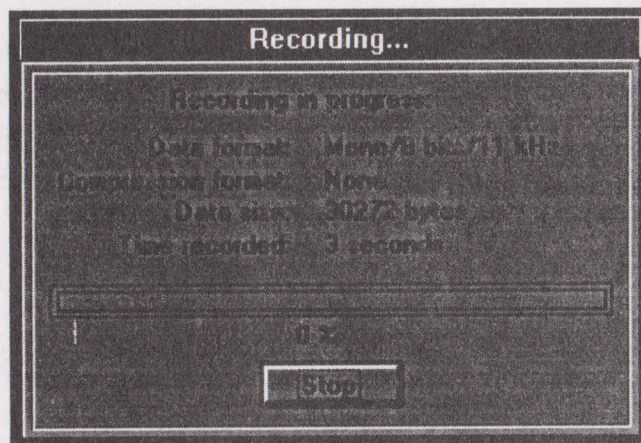


Figure 3-3: The Recording dialog box.

To stop the recording, choose Stop.

Selecting Recording Characteristics

To select recording characteristics:

1. Select Recording Settings from the Options menu.

The Recording Settings dialog box similar to Figure 3-4 appears.

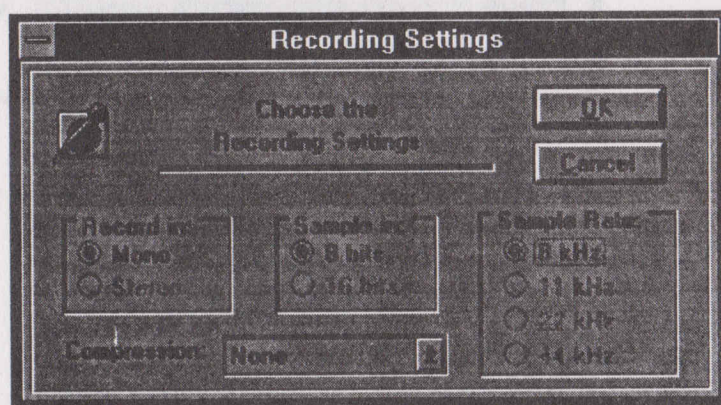


Figure 3-4: The Recording Settings dialog box.

2. Select the desired settings.
 - ☐ Select 8 kHz or 11 kHz frequency for voice-quality sampling rate.
 - ☐ Choose OK.

Embedding a Wave File

When you embed a wave file, you load a copy of the wave file in Soundo'LE and transfer it to an application such as Write that supports Object Linking and Embedding (OLE). If you edit the wave file in Soundo'LE, the wave file in Write will not be affected because you no longer have any connection to the file in Write.

You can embed a wave file using three methods:

- ☐ From a document (Write for example).
- ☐ From Soundo'LE.
- ☐ By dragging the icon located in the Soundo'LE window and inserting it into an open document.

To embed a wave file starting from Write:

1. Open the Write document where you want to embed a wave file.
2. Select Insert Object from the Edit menu.

The Insert Object dialog box similar to Figure 3-5 appears.

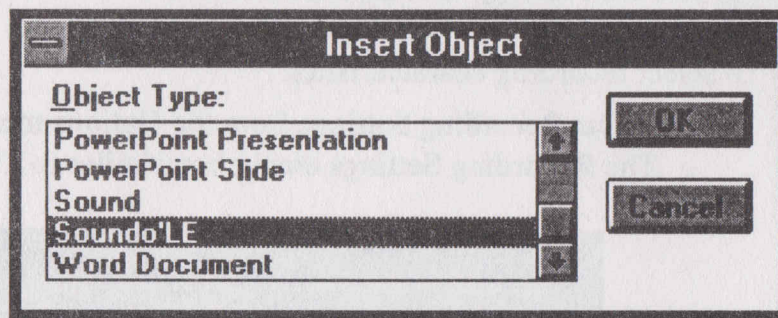


Figure 3-5: The Insert Object dialog box.

3. Select Soundo'LE.
4. Choose OK.
The Soundo'LE application opens.
5. Select Open from the File menu to select an existing wave file.
Alternatively, you can do a recording and save it into a new file before you include the file in the document.
6. Choose OK.
7. Select Update Write from the File menu.
This embeds the wave file into the Write document and an icon representing the wave file will be placed in Write.
8. Select Exit & Return to Write from the File menu.
This returns to the Write document.

To embed a wave file starting from Soundo'LE:

1. Open Soundo'LE.
2. Record a new wave file or open an existing wave file you want to embed.
3. Choose Copy Sound as an Object from the Edit menu.
The wave file is placed onto the Clipboard.
4. Open the Write document where you want to embed the wave file.
5. Select Paste Special from the Edit menu in Write.
The icon representing the embedded wave file appears.

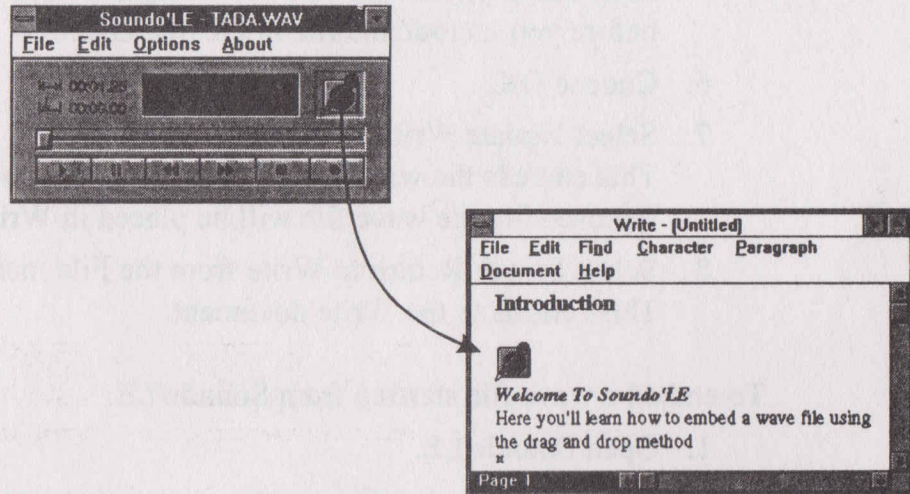
To embed a wave file using the drag and drop method:

1. Position the Soundo'LE window and the application window so that both are in view.
2. In Soundo'LE, open the wave file that you want to drag to the document. Alternatively, you can do a recording and save as a new file before you include the file in the document.

Soundo'LE will display the icon in its window when a wave file is opened. No icon is displayed in the Soundo'LE window if no wave file is selected.

3. Open your application document.

4. Position your cursor over the icon in the Soundo'LE window and drag the icon to the document.
5. Release the mouse button.
The icon appears in the document file.



Linking a Wave File

When you link a wave file, you are not making a copy of the wave file. You are only making a reference to the wave file. If you edit the wave file in Soundo'LE, the wave file in an application such as Write will be updated to reflect the changes.

To link a wave file in Write:

1. Open Soundo'LE.
2. Create a new wave file or open an existing file that you want to link.
3. Save the wave file.
The wave file must be saved before you can link it to an OLE client.
4. Choose Copy Sound as an object from the Edit menu.
The wave file is placed onto the Clipboard.
5. Open the Write document where you want to link the wave file.
6. Select Paste Link from the Edit menu in Write.
The icon representing the wave file appears.

Quitting Soundo'LE

To quit Soundo'LE:

1. Select Exit from the File menu.

The Soundo'LE dialog box similar to Figure 3-6 appears if the latest changes have not been saved.

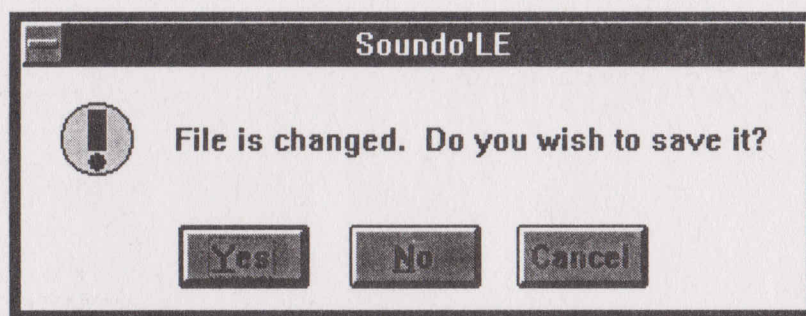
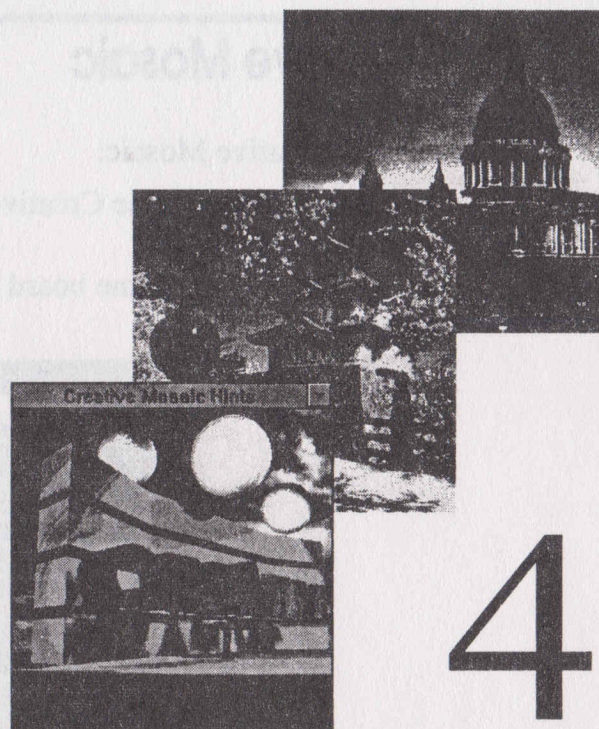
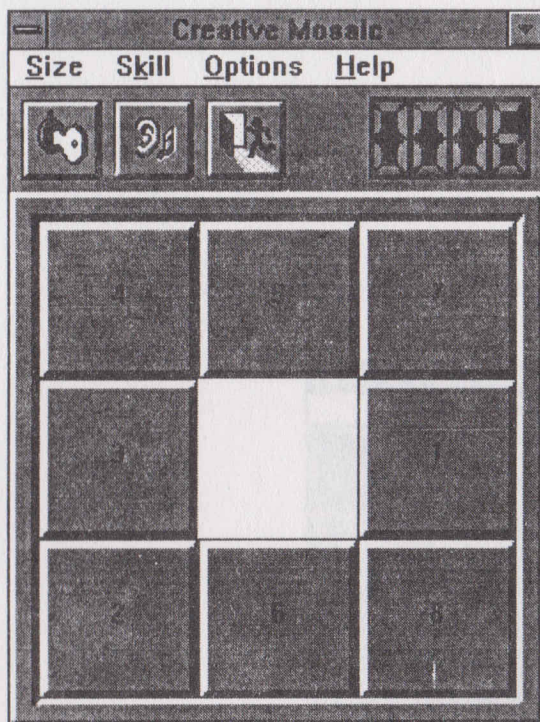


Figure 3-6: The Soundo'LE dialog box.

2. Choose Yes to save the changes, No if you do not want to save the changes, or Cancel if you want to continue working in Soundo'LE.



Creative Mosaic

Creative Mosaic is an exciting board game that puts your mental faculty and agility to the test. It requires you to analyze and plan your moves carefully as you take on the task of arranging the tiles in the correct order using the least number of moves.

This chapter is organized as follows:

- ☐ Starting Creative Mosaic
- ☐ Playing Mosaic
- ☐ Choosing Game Difficulty
- ☐ Using Bitmap Tiles
- ☐ Getting Help

Starting Creative Mosaic

To start Creative Mosaic:

1. Double click the Creative Mosaic icon in your audio card's group window.

The Mosaic game board similar to Figure 4-1 appears.



Figure 4-1: The Mosaic game board.

Playing Mosaic

In a grid with numbered tiles, the objective is to arrange the tiles in the correct numeric sequence. You arrange the tiles by moving them around the grid. A move is made by clicking a tile adjacent to the empty square. This moves the tile to the empty square. You continue shuffling the tiles until you have successfully arranged the tiles in numeric sequence.

A completed Mosaic game board with the tiles arranged in order is shown in Figure 4-2.

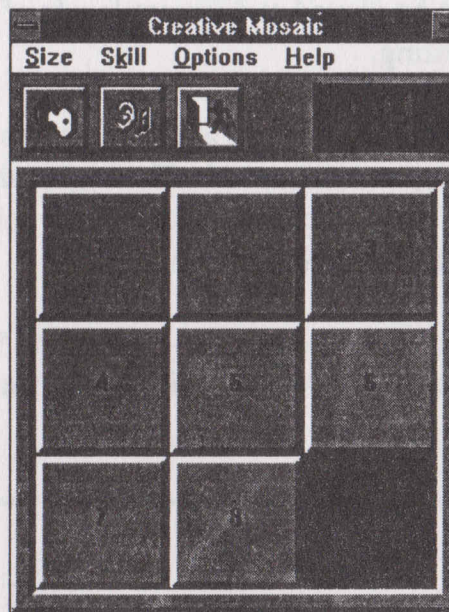


Figure 4-2: A 3x3 grid in numeric order.

The Mosaic game board consists of several buttons, a move counter, and pull-down menus.



Choose this button to start a new game.



Everytime you make a move on the Mosaic game board, a sound is heard. If you do not want any sound, choose this button.



Choose this button to quit Mosaic.



To the right of the three buttons is the move counter. The counter displays the number of moves that have been made. When you begin a game, the move counter starts at zero. Everytime a tile is moved, the move counter is increased by one.

Choosing Game Difficulty

Mosaic can be played at different levels of difficulty using the skill level and grid setting.

There are three skill levels available in Mosaic. They are Beginner, Intermediate, and Advanced. The higher the skill level, the more jumbled up the tiles are. To choose a skill level, select Beginner, Intermediate, or Advanced from the Skill menu.

Six grid settings are available—3x3, 4x4, 5x5, 6x6, 7x7, and 8x8 grids. To choose a grid, select the grid setting from the Size menu.

Using Bitmap Tiles

In addition to playing Mosaic using numbered tiles, you can also play Mosaic using bitmap tiles. All you have to do when playing with bitmap tiles is to arrange the tiles to form the bitmap picture.

To use bitmap tiles:

1. Select Picture from the Options menu.
The Open dialog box similar to Figure 4-3 appears.

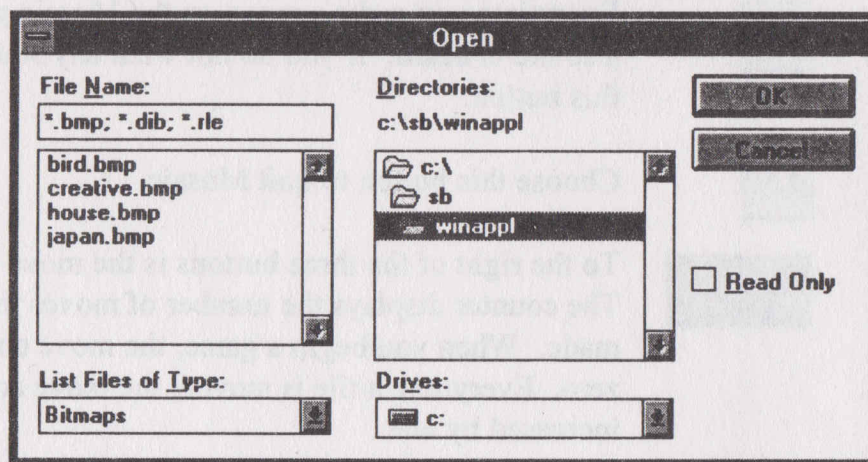


Figure 4-3: The Open dialog box.

2. Select the desired bitmap file from the File Name list box.
3. Choose OK.
The bitmap picture appears on the Mosaic game board.

Getting Help

You can get help through the Help menu in the Mosaic game board. For example, if you are playing Mosaic using HOUSE.BMP in your audio card software's WINAPPL directory, choosing Hints from the Help menu will display the bitmap picture shown in Figure 4-4. You can position Creative Mosaic Hints beside your game board to help you fit the bitmap picture.

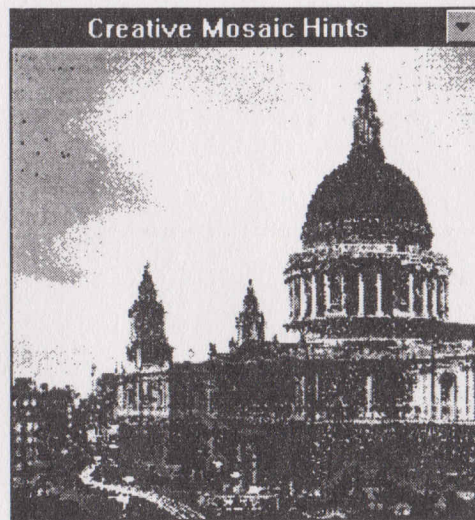


Figure 4-4: The Creative Mosaic Hints.

PLAY Utility

The PLAY utility allows you to play a wide range of sound files. By simply entering a command at the DOS prompt, you can now play Microsoft Wave (.WAV), Creative Voice (.VOC), MIDI (.MID), and Creative Music (.CMF) files. And if you want to play a set of files with the same file extension, the utility gives you the flexibility to play them in sequence without requiring you to specify each file individually at the DOS prompt.

This chapter provides you with detailed information for using PLAY. It is organized as follows:

- ☐ Knowing the PLAY Command
- ☐ Using PLAY
- ☐ Controlling Playback

Knowing the Play Command

Before you play sound files, you should be familiar with the command line of PLAY.

Command Line for Playing Sound Files

The command line for playing sound files is:

PLAY *file1* [*file2...*] [/Q] [/H] [/?]

<i>file1</i>	Name of the initial file you want to play.
<i>file2...</i>	Name(s) of additional file(s) of the same type to play.
/Q	Disables display of playback information (file format, play time, filenames, and the key menu) while a file is playing.
/H or /?	Displays description for using PLAY.

You need to take note of the following when using PLAY:

- ☐ If you enter PLAY without any parameters, a description for using PLAY appears.
- ☐ If you enter a filename without specifying an extension, PLAY will search the current directory for that filename. If there exists more than one extension for the filename, the utility will play only one file in the following order of preference: .WAV, .VOC, .MID and .CMF.
- ☐ Before you play a Creative Music (.CMF) file, you have to load the SBFMDRV.COM driver into memory. This is done by typing SBFMDRV at the directory where this driver is found.
- ☐ When you enter a filename, you can specify part of the filename and use the * or ? character to represent the remaining missing characters. The * character represents one or more characters, while the ? character represents only a single character.

For example, if you enter **PLAY *.WAV**, all wave files will be played. If you enter **PLAY TEST*.WAV**, all wave files whose filename begins with TEST will be played. If you enter **PLAY TEST?.WAV**, all wave files whose filename contains five characters and begins with TEST will be played.



PLAY *.* or PLAY TEST.* will not work because PLAY can only work with files of one type collectively.

Using Play

The following are some examples of how you can play sound files in DOS:

- ☐ To play a Creative Music File (SONG.CMF):
 1. Make sure that SBFMDRV.COM is loaded in memory
 2. Type PLAY SONG.CMF and press <Enter>.
- ☐ To play three voice files (TEST1.VOC, TEST2.VOC, and TEST3.VOC) in sequence:
 1. Type PLAY TEST1.VOC TEST2.VOC TEST3.VOC and press <Enter>.



If any one of the file specified does not exist in the directory, the command will not execute.

- ☐ To play a voice file (TEST1.VOC) without displaying the playback information:
 1. Type PLAY TEST1.VOC /Q and press <Enter>.

Controlling Playback

You can control the playback of a file using hot keys. A menu of the available hot keys appears when you enter PLAY without the /Q switch.

Wave File Control Hot Keys

The following are the hot keys you can use while playing wave files:

<Esc>	Stops the wave file and exits the program.
<Spacebar>	Pauses the wave file.
<C>	Resumes the paused wave file in a specified set.
<P>	Plays the previous wave file in a specified set.
<N>	Plays the next wave file.
<< or >>, and press <Enter>	Selects and plays another wave file if more than one file is specified at the DOS prompt.

Voice File Control Hot Keys

The following are the hot keys you can use while playing voice files:

<Esc>	Stops the voice file and exits the program.
<Spacebar>	Pauses the voice file.
<C>	Resumes the voice file
<P>	Plays the previous voice file in a specified set.
<N>	Plays the next voice file in a specified set.
	Stops repeating a section of the voice file and proceeds to the next section.
<< or >>, and press <Enter>	Selects and plays another voice file if more than one file is specified.

MIDI File Control Hot Keys

The following are the hot keys you can use while playing MIDI files:

<Esc>	Stops the MIDI file and exits the program.
<Spacebar>	Pauses the MIDI file.
<C>	Resumes the MIDI file.
<P>	Plays the previous MIDI file in a specified set.
<N>	Plays the next MIDI file in a specified set.
<M>	Changes to a different set of musical instruments based on the Basic, General, and Extended standards on the MIDI mapper.
Up or Down Arrow	Changes the tempo of the playing MIDI file.
Left or Right Arrow	Reproduces the the sound in a different key by raising or lowering the pitch.
<< or >>, and press <Enter>	Selects and plays another MIDI file if morethan one file is specified.

CMF File Control Hot Keys

The following are the hot keys you can use while playing CMF files:

<Esc>	Stops the playing CMF file and exits the program.
<Spacebar>	Pauses the CMF file.
<C>	Resumes playing the paused CMF file.
<P>	Plays the previous CMF file in a specified set.
<N>	Plays the next CMF file in a specified set.
Left or Right Arrow	Transposes (reproduces) the sound in a different key by raising or lowering the pitch.
<< or >>, and press <Enter>	Selects and plays another CMF file if more than one file is specified.

Using the Control Hot Keys

The following are the hot keys you can use while playing MIDI files:

Stop the MIDI file and exit the program	Esc
Resume the MIDI file	Spacebar
Resume the MIDI file	→
Play the previous MIDI file in a specified set	←
Play the next MIDI file in a specified set	→
Change to a different set of musical instruments listed on the Basic Control and Extended keyboards on the MIDI window	→
Change the tempo of the playing MIDI file	Up or Down Arrow
Reproduce the sound in a different key by raising or lowering the pitch	Left or Right Arrow
Select and play a different MIDI file in a specified set	→ or ← and press Control

Using the Control Hot Keys

The following are the hot keys you can use while playing CMF files:

Stop the playing CMF file and exit the program	Esc
Resume the CMF file	Spacebar
Resume playing the current CMF file	→
Play the previous CMF file in a specified set	←
Play the next CMF file in a specified set	→
Change (reproduce) the sound in a different key by raising or lowering the pitch	Left or Right Arrow
Select and play a different CMF file in a specified set	→ or ← and press Control

RECORD Utility

The RECORD utility allows you to record sound to a file by specifying the file type and recording parameters such as sampling rate and recording mode at the DOS prompt.

Sound is recorded into a sound file in Microsoft Wave (.WAV) or Creative Voice (.VOC) file format.

This chapter provides you with detailed information for using RECORD. It is organized as follows:

- ☐ Knowing the RECORD Command
- ☐ Using Record

Knowing the RECORD Command

Before you record a sound file in wave or voice format, you should be familiar with the RECORD utility.

The command line for recording wave or voice files is:

RECORD *file* [/S:*x*] [/Q] [/H] [/?]

where

file Represents the name of the file and its extension, .WAV or .VOC you want to record sound data into.

/S:*xx* Sets the sampling rate.

For .VOC format:

xx = 4000 to 15160 Hz

For .WAV format:

xx = 11025 Hz



The higher the sampling rate, the better is the recording quality.

/Q Disables display of recording information.

/H or /? Displays description for using RECORD.

The following are conditions of RECORD:

- ☐ If you enter RECORD without any parameters, the online description for using RECORD appears.
- ☐ If no switches are specified, the sound will be recorded in mono 8-bit wave file format with 11025 Hz sampling rate.
- ☐ To stop recording, press <ESC>.
- ☐ The recording will stop when the disk is full.
- ☐ A new file will be created or an existing file overwritten for recording. If you enter RECORD without specifying the /Q switch, recording information such as sample size and sampling rate will appear.

Using Record

The following are some examples of how you can record sound files in DOS:

- ☐ To record from an external CD player into a sound file (SONG.VOC) in .VOC format:
 1. Connect your external CD player to the Line-in jack of your audio card.
 2. Play your CD.
 3. Type RECORD SONG.VOC and press <Enter>.
- ☐ To record a sound file without displaying the recording information:
 1. Type RECORD SONG.VOC /Q and press <Enter>.

The following are available at XBOX360

- 1. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 2. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 3. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 4. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 5. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 6. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 7. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 8. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 9. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 10. To record from an external CD player into a record file (RECORD VOC) or VOC format

Using Record

The following are some examples of how you can record sound files in

- 1. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 2. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 3. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 4. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 5. To record from an external CD player into a record file (RECORD VOC) or VOC format
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- 8. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 9. To record from an external CD player into a record file (RECORD VOC) or VOC format
- 10. To record from an external CD player into a record file (RECORD VOC) or VOC format

FM Intelligent Organ

FM Organ is a DOS-based application that can transform your computer into an organ and you into an instant musician. With this program, you can learn to play complex musical pieces on your computer keyboard. FM Organ also has a function to help you master the organ. And if you have a MIDI-compatible keyboard, using the MIDI interface on your audio card will increase your music-making capabilities tenfold.

- ☐ Starting FM Organ
- ☐ Octaves on FM Organ
- ☐ Loading a Song
- ☐ Learning a Song
- ☐ Playing FM Organ
- ☐ Saving, Loading and Replaying a Song
- ☐ Adding Accompaniment to Songs
- ☐ Changing Instruments and Rhythms
- ☐ Changing Default Settings
- ☐ Using the MIDI Mode

Starting FM Organ

To start FM Organ:

1. Change to your audio card software's ORGAN directory.
2. Type FMORGAN and press <Enter>.

The FM Organ main menu similar to Figure 7-1 appears.

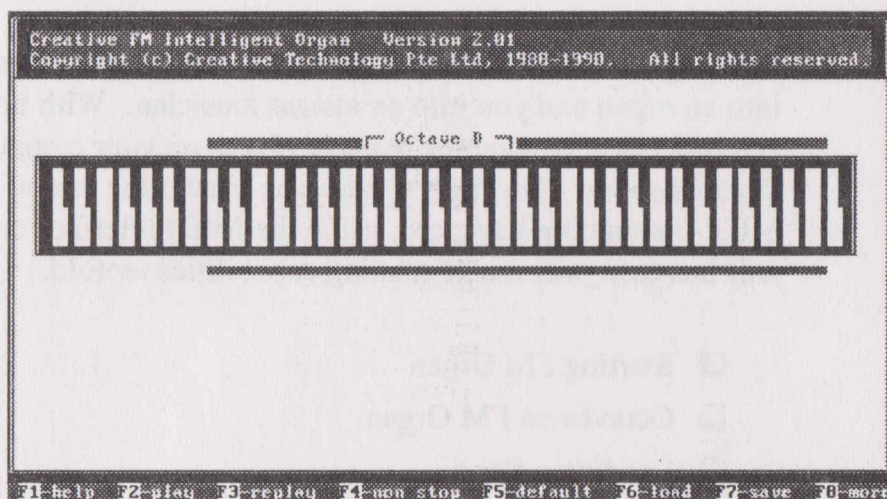


Figure 7-1: The FM Organ Main Menu.

Octaves on FM Organ

Like any organ keyboard, the keys on FM Organ are arranged in groups of 12 keys (5 black and 7 white keys). Each group is called an octave and the first white key of each octave is "DO", the second "RE", the third "MI", and so on. The Middle C is the "DO" note of the D octave.

There are seven octaves on FM Organ. For convenience, they are named A, B, C, D, E, F, and G (see Figure 7-2). Only four octaves can be accessed from the PC keyboard at one time. To access the rest of the octaves, use the right or left arrow key.

The green bar above FM Organ indicates the four octaves. The four octaves represent the four rows of keys on your PC keyboard, that is rows 1, Q, A, and Z, that are used for playing FM Organ. If the D octave is shifted to the far-left of the green bar, then row Z would represent the D octave. On the other hand, if the D octave is shifted to the far-right, then row 1 would represent the D octave (see Figure 7-2).

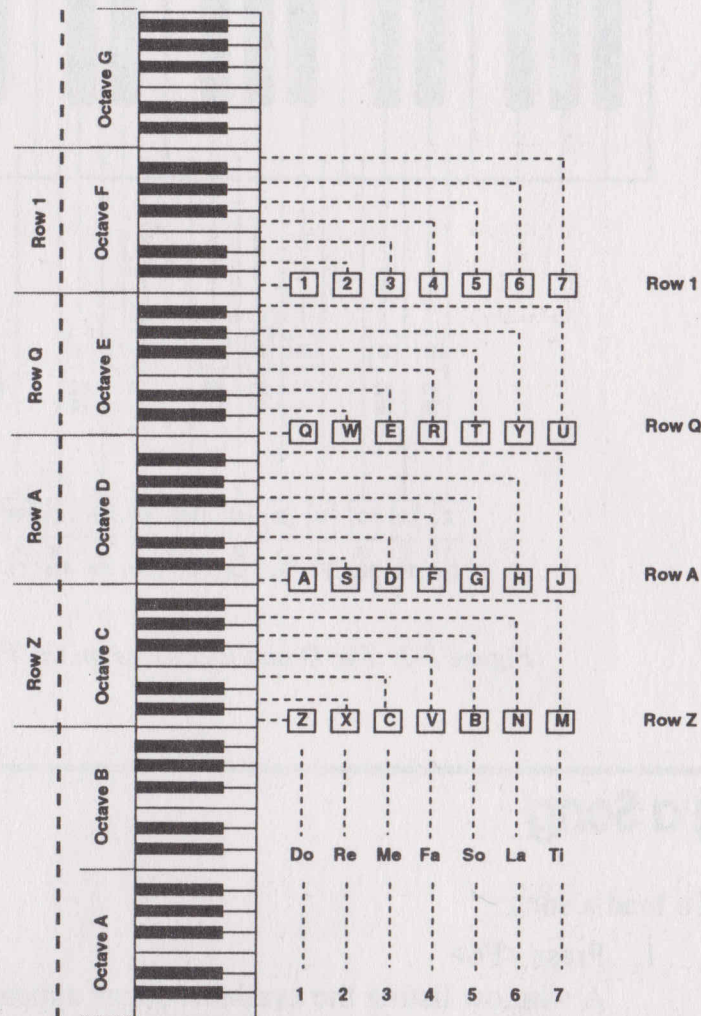


Figure 7-2: Seven octaves of FM Organ on the PC keyboard.

The four octaves do not allow you to make use of the black keys on the keyboard. If you like to make use of the black keys, press <Tab>. When <Tab> is pressed, the four rows on the keyboard will only comprise two octaves, namely D and E (see Figure 7-3).

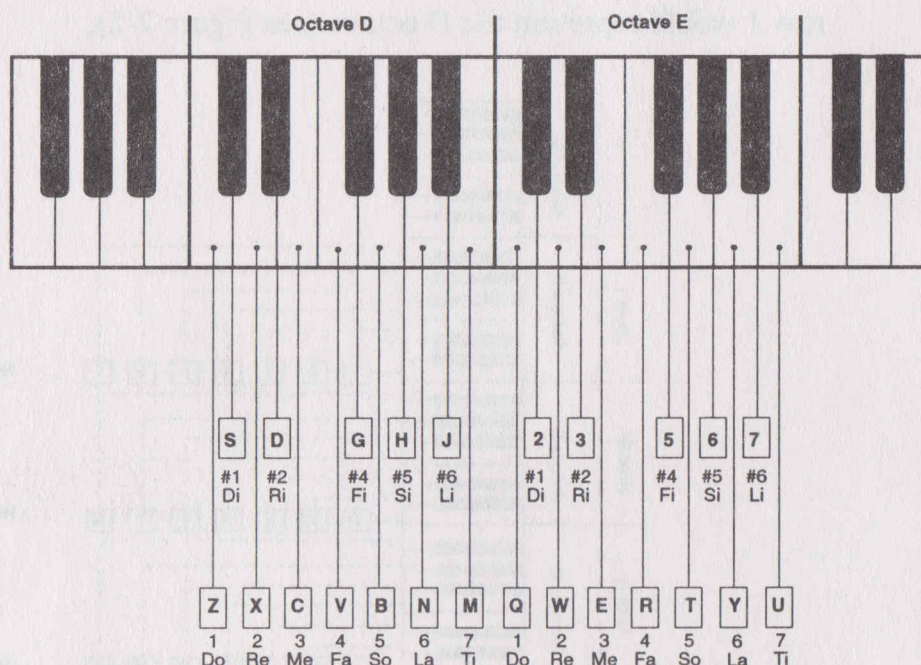


Figure 7-3: The D and E octaves on the PC keyboard.

Loading a Song

To load a song:

1. Press <F6>.
A window listing the available songs appears below FM Organ.
2. Use <Page Up>, <Page Down> or the arrow keys to select a song.



<Page Up> and <Page Down> are used for moving between different groups of songs, while the arrow keys are used for selecting a particular song within a group.

3. Press <Enter>.
4. Press <F4> to play the song.



If you press <F2> instead of <F4> to play the song, you will hear the accompaniment and not the melody. To hear the melody, the song will have to be reloaded.

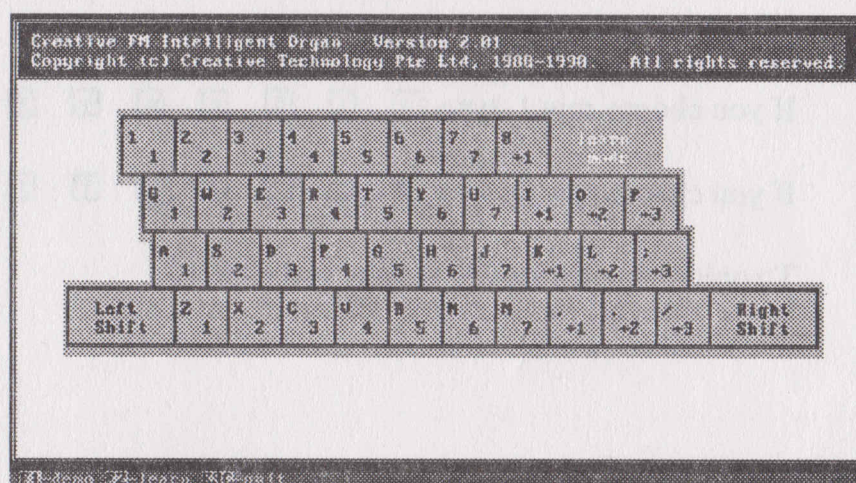
Learning a Song

FM Organ has a feature that helps you learn any of the songs provided. It teaches you how to play a song by highlighting the alphabetical keys corresponding to the music notes on the keyboard. With such a feature, all you need to do is to press the key every time it is highlighted.

To learn a song:

1. Press <F6> from the main menu.
2. Choose the song you want to learn using <Page Up>, <Page Dn> or the arrow keys.
3. Press <F8,F1>.

A layout of the PC keyboard similar to Figure 7-4 appears.



Playing FM Organ

To play FM Organ, press <F2> from the main menu. When you press any of the key on the PC keyboard, you should hear a corresponding sound. If you cannot hear any sound, please check the volume control knob on your sound card.

If you are not able to find something to play, you can try the tune in Figures 7-5 and 7-6. To play the tune, press the key on the PC keyboard that corresponds to the number on the music notes. For example, the first seven notes in Figure 7-5 are as follows:

1 1 5 5 6 6 5

You can use any of the four octaves, that is, any of the four rows on the PC keyboard to play the tune.

If you choose row 1, type 1 1 5 5 6 6 5

If you choose row Q, type Q Q T T Y Y T

To quit from playing FM Organ, press <Esc>.

TWINKLE, TWINKLE, LITTLE STAR

(filename : TWINKLE)

KEY 1 = C

Rhythm = March

The musical score is written on four staves in 4/4 time. Each staff includes fingerings (1-5) above the notes and lyrics below. The lyrics are: "Twin - kle twin - kle lit - tle star, how I won - der what you are? Up a - bove the world so high, like a dia - mond in the sky. Twin - kle twin - kle lit - tle star how I won - der what you are." The score ends with a double bar line on the fourth staff.

Twin - kle twin - kle lit - tle star, how I won - der

what you are? Up a - bove the world so high,

like a dia - mond in the sky. Twin - kle twin - kle

lit - tle star how I won - der what you are.

Figure 10-5: Music score for "Twinkle, Twinkle, Little Star".

WHEN THE SAINTS GO MARCHING IN

(filename : SAINTS)

KEY 1 = C

Rhythm = March

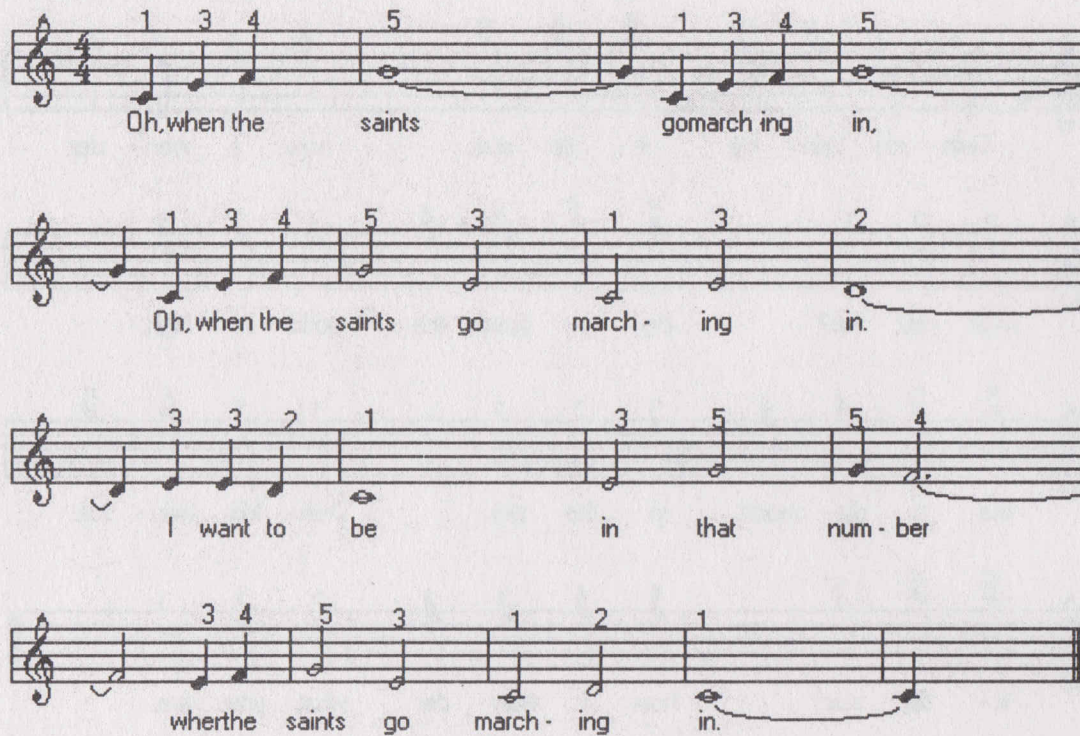


Figure 10-6: Music score for "When The Saints Go Marching In".

Saving, Loading and Replaying a Song

To save a song you have played using FM organ:

1. Press <F7>.
2. Enter the name of the song when prompted.
3. Press <Enter>.

FM Organ remembers the song you have played by storing it temporarily in a reserved memory area in your computer called the buffer. The buffer is 64 KB. Under normal conditions, the words "Buffer Status" will be indicated in blue. When the buffer is almost full, the words will flash in red. When the buffer is full, the words become red. If you like to play the song again before saving it, press <F4>. After that, press <F7> if you want to save it or <Esc> to quit.

To make sure the song has been saved, press <F2,Esc>. By so doing, you are removing the song stored in the buffer. With the song removed from the buffer, you can check whether the song has been saved when you press <F6,Enter> to load the song. If the song is not found, it means that it has not been saved.

To replay the song, press <F3> or <F4>. For <F3>, the song will only play once. But for <F4>, the song will keep on repeating until <Esc> is pressed. Changes made to the song while in the <F4> mode will not be saved. However, in the <F3> mode, the changes can be saved by pressing <F7>.

Adding Accompaniment to Songs

FM Organ comes with several features that will not only enhance the song you play, but also make you seem like a maestro. These features are Auto Bass-Chord, Auto Arpeggio, and Artificial Melody.

Auto Bass-Chord

The Auto Bass-Chord adds bass and chord to a song when <Spacebar> is pressed. To stop Auto Bass-Chord, press <Spacebar> again. To ensure Auto Bass-Chord does not end abruptly when you want to end this feature, press <Enter> instead of <Spacebar>. To increase/decrease the volume for Auto Bass-Chord, use <Page Up>/<Page Dn> or the arrow keys on the numeric keypad.

Auto Arpeggio

The Auto Arpeggio adds a melodious touch to a song by playing the chord not simultaneously but in rapid succession. To select any of the six arpeggios, use the right or left square bracket. To stop Auto Arpeggio, press <'>. To increase/decrease the volume for Auto Arpeggio, use the up/down arrow key on the numeric keypad.

Artificial Melody

When the Artificial Melody is activated, you will hear a string of melody accompanying what you are playing. This feature can be activated by pressing <9>, <0>, <->, or <=>. To increase/decrease the volume for Artificial Melody, use the <Home>/<End> key on the numeric keypad.

Changing Instruments and Rhythms

All the songs in FM Organ consist of an instrument and a rhythm accompanying it. Both the instruments and rhythms can be changed. The instruments are represented by <F1> to <F4>. Each function key supports five instruments, giving a total of 20 instruments. The rhythms are represented by <F5> to <F8>. Each function key supports four rhythms, giving a total of 20 rhythms. Pressing a function key lets you switch between the various options (see Table 7-1).

To change the instruments and rhythms of a song:

1. Press <F2>.
The CMS's Intelligent Organ control panel appears.
2. Select <F1> to <F4> for changing the instruments.
3. Select <F5> to <F8> for changing the rhythms.
4. To change the tempo of the rhythm, press <Ins> to increase it and to decrease it.
(The tempo is indicated by the "moving numbers" on the far-left.)
5. To change the scale of the songs, press <F9> for songs that are in major scale and <F10> for songs that are in minor scale.
6. To transpose a song, press <+> to transpose the song one semitone up and <-> one semitone down. Pressing <Shift + +> transposes a song four perfect tones up and <Shift + -> transposes a song five perfect tones down.



Changes made in CMS's Intelligent Organ control panel cannot be saved. To save the changes, you need to change the default settings.

Table 7-1: Instruments and Accompaniment

F1	F2	F3	F4
Piano	Trumpet	Flute	Sitar
Harp	Saxophone	Harmonica	Jamaican
El guitar	Trombone	Clarinet	Bells
Marimba	Mars	Violin	Synth1
Alien	Organ1	Oboe	Synbass

F5	F6	F7	F8
March	Rhumba	Swing	Waltz
March1	Samba1	Swing1	Waltz1
March2	Bosonov1	Rock & Roll	Waltz2
March68	Tango1	Disco1	Jwaltz

Changing Default Settings

To change the default settings of a particular song:

1. Press <F5> from the main menu.
The Default Settings window appears.
2. Press <T> to select the title of the song.
3. Use the up or down arrow key or press the characters highlighted in red to select the options.
4. Use the right or left arrow key to change the default options.
5. Press <Enter> once you have confirmed the settings.
6. Press <F7> to save it or <Esc> to quit without saving.
7. Press <O> to restore the values to the factory default settings.

Using the MIDI Mode

FM Organ supports the MIDI interface on the audio card. With the MIDI interface, you can play FM Organ using an organ keyboard.



You need an electronic organ keyboard or synthesizer that has a MIDI interface.

To use the MIDI mode:

1. Connect the MIDI Kit to the Joystick Connector on your audio card.
2. Connect the MIDI cable from the MIDI-in on the MIDI Kit to the MIDI-out on the MIDI keyboard.
3. Switch on the MIDI keyboard and set it to the MIDI mode.
4. Run FM Organ.
5. Press <F8, F5>.

This activates the MIDI mode on FM Organ and enables it to receive MIDI codes from the MIDI keyboards.

6. Select the key signature using the arrow keys.

The functions of the arrow keys are as follows:

- | | |
|--------------------------------------|--|
| ☐ Up arrow | Increases number of sharps or decreases number of flats. |
| ☐ Down arrow | Decreases number of sharps or increases number of flats. |
| ☐ Left arrow | Lowers by one semitone. |
| ☐ Right arrow | Raises by one semitone. |

7. Press <Enter> to return to the main menu when the desired key signature has been selected.

The MIDI mode is now turned on.

8. Press <F2>.

You can now play the MIDI keyboard.

9. Press <F8, F5> to end the MIDI mode,

If the key signature changes in the middle of the song, use the transpose functions on FM Organ to match the key signature used by the MIDI keyboard. When you save a song played on the MIDI keyboard, the song saved can be replayed. But you will not hear the tune from the MIDI keyboard because the MIDI-Out to the MIDI keyboard is not implemented.

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Creative Labs, Inc.
1901 McCarthy Boulevard
Milpitas CA 95035

Creative Technology Ltd
67 Ayer Rajah Crescent #03-18
Singapore 0513

Printed in Singapore

TWPP WK 26/94 0421350040-1